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ABSTRACT

A study examined the perceptions of Florida vocational teachers concerning their needs for technical updating. A survey administered to all vocational teachers in Florida in 1982-83 identified more than 2,000 individual technical update needs. Since this number was too large to identify specific areas of priority, a project was conducted in 1983-84 to reduce the number of updating needs and to prioritize them in such a way as to provide a database that could be used in providing funding for updating activities in Florida. To prioritize the technical-update needs identified in 1982-83, a selected group of teachers reviewed the needs list to reduce redundancy. Next, employees prioritized the top 10 needs in each teaching area. Finally, a literature review was conducted to identify models of technical update programs, to determine levels of funding necessary for such programs, and to identify strategies for persuading teachers to participate in updating activities. (This report contains a summary of the literature review, lists of identified needs and potential sources of training to meet the need for such training in 10 vocational education subject areas, and source information sheets detailing sources of technical update training that are located outside Florida. (MN)

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FINAL REPORT
PROJECT NO. DVE. 171-1524-4-1C11
FROM JULY 1, 1983 to AUGUST 31, 1984

TECHNICAL UPDATING NEEDS ASSESSMENT OF FLORIDA'S VOCATIONAL INSTRUCTORS

FLORIDA DEPARTMENT OF EDUCATION
DIVISION OF VOCATIONAL AND ADULT EDUCATION
TALLAHASSEE, FLORIDA 32301

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FINAL REPORT
PROJECT NO. DVE 171-1514-4-1C11
FROM JULY 1, 1982 to AUGUST 31, 1984

TECHNICAL UPDATING NEEDS ASSESSMENT OF FLORIDA'S VOCATIONAL INSTRUCTORS

THE UNIVERSITY OF WEST FLORIDA
PENSACOLA, FLORIDA 32514

BILLIE T. RADER, Ph.D

The project reported herein was conducted pursuant to a grant from the Division of Vocational Education, Florida Department of Education. Contractors undertaking such projects are encouraged to express freely their professional judgement in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent the official position or policy of the Florida Department of Education.

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The project director also wishes to thank the many teachers and business and industry persons who spent many hours reviewing the technical need lists. Without the assistance provided by these persons the project could not have been concluded.

B.T. Rader

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ABSTRACT OF THE FINAL REPORT

Title of Project — The Development of a Model for Technical Updating of Vocational Teachers in Florida: Needs Assessment

Organizations: The University of West Florida
Project Director: Billie T. Rader, Ph.D.
Expenditures: $38,278.00
Duration of Project: July 1, 1893 - August 31, 1984
Project Number: DVE 171-1524-4-1C11

PROBLEM

During recent years, the Florida Division of Vocational and Adult Education has funded numerous workshops and other activities designed to update the technical skills of Vocational teachers. Projects were funded based upon the best available data, however, no comprehensive state-wide assessment of what technical skills teachers thought they needed had been available.

OBJECTIVES

In 1982-83, the Florida Division of Vocational and Adult Education funded a project designed to survey all vocational teachers in Florida as to their opinions on what technical updating they needed. This survey yielded more than two thousand listed needs. Since this number of needs was too large to identify specific areas of priority, the purpose of the 1983-84 project was to reduce the number of updating needs and prioritize them in such a way that the state staff could use the data as a guideline when funding updating activities in Florida.

PROCEDURES

The more than 2000 technical needs indentified in 1982-83 were grouped according to teacher areas. A selected group of teachers reviewed the needs list in order to reduce redundance. Employees then prioritized the top ten needs in each teaching area identified.

RESULTS AND POTENTIAL UTILIZATION

A listing of the top ten prioritized needs along with possible training sources, both within Florida and nationally, are identified.

Most professionals familiar with professional development know that in order for a teacher to learn from an in-service activity, the teachers must be a part of the decision making process. An effective program of professional development is one that meets both the individual's needs and organizational needs. "The critical organizational task then becomes one of assisting the individual staff member to improve the sharpness and sensitivity of his/her judgment regarding perceived staff development needs." (Ely, Finch and Looney, 1977).

The first activity necessary to develop a state-wide model for technical updating is to determine the perceived needs of teachers. The major problem with such data analysis is that "Vocational staff have as many in-service needs as they have shapes and sizes." (Ely, Finch and Looney, 1977).

In 1982-83 the Division of Vocational Education funded a project designed to identify technical updating needs of vocational teachers. The results of this study yielded more than 2000 individual updating needs. Since this list of needs were perceived needs and too large to identify priority areas, the Division funded this project to use a combination of vocational teachers and business and industry employers to prioritize the updating needs in several teaching areas. A second purpose was to identify sources of training which may be used in the future to provide in-service activities.

Methods:

This project began with a review of literature of technical updating activities. This review included technical updating models, incentives, training sources and funding levels needed to be successful.

The more than 2000 technical updating needs identified in 1982-83 were grouped according to teaching areas. Selected teachers in several regions of Florida were asked to review the technical needs lists and eliminate redundancy resulting from using more than one descriptor to mean the same thing. The more than 150 teachers were also asked to add additional technical needs whenever they determined that a need was overlooked. This activity resulted in decreasing the number of needs listed by almost one-half.

Selected representatives from business and industry were then asked to review and prioritize the lists of technical needs. The representatives were in most cases the person responsibile for hiring new employees. The result yielded technical updating lists for several vocational teaching areas prioritized for the top ten needs.

Results and Findings:

The review of literature for this study is concerned with the development of a model that will technically update Vocational

Education teachers. This review is dealt with in three sections. The first looks at the historical development of the models that have been implemented during the past few years.

The second section of the literature review explains in detail what each of the technical updating models involve. This section will also review the advantages and disadvantages of implementing a technical updating model.

The final section takes a look at what the future holds for the implementation of technical updating models.

Historical View

Technological update refers to the acquisition of technical (as opposed to pedagogical) knowledge and skills needed by vocational/technical teachers and instructors to provide their students with up-to-date preparation for the current technology of the world of work. More and more vocational teachers must have the opportunity and the means to stay current with the fast-changing technology of their fields (Woncott, 1983).

Vocational teachers and instructors today often need to update their own technical knowledge and skills to keep pace with the fast-changing technology of the world of work. Secondary and post secondary vocational education institutions employ a wide variety of approaches in providing technological update to their teachers and instructors. Most vocational educators could cite many of these approaches. Such traditional devices as sabbatical leave allow teachers substantial time away from their classroom duties for professional or technical training; workshops on a vast array of topics abound in education today; contact with advisory committee members is familiar to most vocational educators; return to work in business or industry is an idea that can arise from common sense alone.

Not all of these approaches, however, have equal potential for achieving the goal of vocational teachers who wish to be up-to-date in the technology of their occupations. One approach may be less effective than another. Some may be costlier than others, or may be more attractive to teachers or administrators, or may require collaboration with local business and industry. Numerous barriers and facilitators such as these may either help or hinder the use of any given approach (Woncott, 1983).

The big question is: How can a skilled craftsman or technician with industrial or business experience maintain and update his skills and technical knowledge after he has been employed as an instructor in a vocational/technical school? (Travis, 1975)

Teachers of occupational education need to be continually updated to be aware of the technical changes taking place within occupations in their area of specialization if they are to make occupational training situations more like the real job. Currently (July, 1974), a cultural lag exists between the expectations of community college clients and those held by faculty members. Faculty were recruited, largely in the sixties and early seventies. They came from graduate training programs or secondary schools. Few had attended community colleges. Their expectations were clear; the curriculum was the first two years of a baccalaureate degree. Students came directly from high school, held "middle class" values regarding education, and were prepared for college level work. The new clients have changed the accuracy of faculty perceptions, but not the perceptions themselves.

Further, during the last decade, faculty members have become isolated from their areas of expertise. During a technological revolution rivaling the industrial revolution of the 1870s, occupational faculty have been out of the business or industrial setting for as much as a decade.

Vocational education teachers need experience in business and industry because of changes in automation. High-speed computers, data processing equipment, and electronic control devices have necessitated revamping the procedures and the job descriptions for numerous occupations. Therefore, vocational teachers should become competent in the job skills that are needed to teach to their students. Through successful work related experience, a person becomes familiar with the skills, technological knowledge, and the moves of the occupation he will be teaching.

The preparation and continued updating of teachers must be the responsibility of the colleges and universities which provide teacher education experience in the relevant disciplines. Such teacher preparation programs will involve of necessity some new relationships between educational institutions and business and industry.

When industry and education ignore each other or fail to cooperate actively, the inevitable result is that schools turn out unqualified workers and industry suffers from shortages of skilled manpower. The students and society are cheated, while industry is forced either to engage in expensive in-plant training programs or be satified with untrained workers who give low-grade performance. The public thus pays twice--once for ineffective schools and again for the expense of ineffectively trained workmen in industry.

Updating experienced vocational-technical teachers through an institute in an industrial setting surpasses traditional methods in both effectiveness and adaptability to individual needs. The industrial setting provides an integrated program for preparing prospective teachers in a rather short time.

Education and industry, by working closely together, not only are able to develop highly effective teacher training programs, but in the process each institution can find new and more efficient ways to utilize its own resources. In addition, each institution can gain insight into the requirements and capabilities of the other.

American businesses and industries currently are undergoing a major technological transition not unlike the Industrial Revolution.

Concurrently, colleges are plateauing; facilities have stabilized; turnover has virtually ceased to exist. Venture capital for innovation, program redesign, or experimentation is in short supply. A monograph recently published by the National Center for Research in Vocational Education at Ohio State University suggest that "The task of keeping Vocational and Technical teachers abreast of the technologies of their own occupational field is becoming increasingly more important, but at the same time, more difficult." (Parsons, 1983, p.6)

The average length of time that vocational and technical teachers had been out of the business or industry of their experience was seven years. The problem became obvious: "Many teachers, having acquired their technology-related skills and knowledge during earlier stages of technology development, are finding those out of date." (Parsons,1983, p.8) Community/junior colleges must respond to the demands of changing technology with faculties that have been characterized as "recluses" - isolated, in an eddy away from the mainstream of their discipline and the college.

Types of Technical Updating Models

The review of literature indicated several types of technical updating models that have been implemented. These models are described in the following paragraphs.

Everyone agrees that technical updating of vocational instruction is a necessity; economic revitalization and the need for increasing productivity demands strong up-to-date programs. Kentucky met this challenge in 1974 by initiating the Staff/Industry Exchange Project. Its major objective was to update the knowledge and skills of vocational educators and industry personnel by exchanging jobs for a period of from one to four weeks.

The exchange project started in the 49 county Applachia area, funded by the Appalachia Regional Commission, but the demand for similar series quickly spread and the project was extended throughout the state. It became totally state funded in 1979. Teacher and administration enthusiasm continues to increase and so does participation. During its eight-year history, the project has served nearly 1,500 educators and administrators.

The Kentucky Staff Exchange Advisory Committee has had a continuing and important role throughout the projects history in helping "put it together." Extensive utilization of the advisory group provided the Kentucky Bureau of Vocational Education staff with procedures that create a minimum disruption of the industrial workplace and still achieve training objectives.

During 1981, San Jose Community College in California implemented an update program. The primary and measurable objective of any industry-based/upgrade activity for instructors is the development of new curriculum, modification of existing curriculum, or the preparation of instructional aids which are based on an extensive and indepth industry based experience. The model developed at San Jose City College included the following key items and options:

- Engage in approximately four weeks (20 days) of full-time (30-40 hrs. per week) work or work experience in an industry setting related to the instructor's field.
- Spend approximately two weeks (10 days) of full-time (60 hrs. total) devoted to curriculum development/modification/audio/visual generation; utilizing the knowledge and practical experience gained during the prior four week activity.
- Provide supplemental salary to ensure that the instructor will "earn" an amount equal to a regular summar salary.
- Provide funds for development of audio visual materials and student handouts.

In 1974, the Eastern Illinois University allowed teachers to be released from regular teaching duties for a minimum of forty hours. This in-service work experience and internship is an educationally planned program designed to provide broad occupational experience and achieve competencies through planned situations. The purpose of inservice education is to improve the educator's performance within his or her current educational role, a role for which he or she previously has been prepared. Eastern Illinois University also had co-op programs. Co-op programs that are planned with practical experience on the student's major field allow for the development of competencies needed during initial years of teaching.

Stout State University recognized the benefit to be gained through school-industry cooperation. Through ties with business and industry, the teaching staff can become aware of new industry practices and technologies and of the skills required of beginning workers. With this firsthand knowledge, vocational and technical instructors can evaluate the relevance of their curricula and teachers.

Stout State implemented an exchange program with Deere and Company. Stout State wanted to establish a closer working relationship between themselves and industry. They wanted to update the occupational competency of the vocational teaching staff. They wanted to gain insight, through the exchange of personnel, pertaining to needed revisions of curricula and programs. They also wanted to assess the employment opportunities and workers in this field.

Wayne State University tested several approaches which provide the technical and professional preparation needed for teaching vocational and technical subjects. Through the cooperative work study program, these experienced tradesmen or technicians are prepared to: 1) develop and organize teaching materials, 2) develop a course of study, 3) prepare instructional materials, 4) plan a laboratory, 5) counsel students and 6) present the course content as it relates to their high level of specialization and experience.

To obtain occupational experience at Bowling Green State

University, prospective business education teachers with a comprehensive major are required to complete a work experience program entitled "Internship in Business Education." The students are expected to perform duties in filing, typing, shorthand, duplicating, and other general office work.

Using both state and county funds, business education teachers in Bucks County, Pennsylvania at Temple University developed the Directed Observation of Elementary Office Positions Program. The major objectives of the program were: (1) to establish a closer working liaison with local businessmen (2) to gain insight into the job requirements for entry level office positions (3) to gain information useful in updating business education curriculums and programs (4) to gain information useful in counseling students interested in office occupations.

At the Virginia Polytechnic Institute, the student enters the senior year, enrolling in courses that prepare him for the first phase of his required occupational experiences which takes place during the following months. In the fall he is back on the campus full time for another cluster of courses. The last quarter of the senior block involves Phase II of the occupational experience and his student teaching.

In the spring of 1984, the Department of Vocational-Technical Education at Rutgers University developed a self directed field experience and seminar program for Master's degree candidates who will teach or coordinate courses in home economics related occupations at secondary, post-secondary, and adult levels. The externship is offered at two levels: exploration in home economics related occupations, yielding three credits; and supervised field work experience in home economics related job clusters, also for three credits.

The University of Illinois wanted to determine how, when, and where teachers of agricultural occupations keep current their knowledge and skills in non-farm agricultural occupations. The teacher education here designed a four-week experimental cooperative education program involving structured, on-the-job occupational experience in agribusiness plus related instruction in the classroom for teachers of agricultural occupations.

At Colorado State University a student can earn both his vocational credentials and bachelor of education degree within a five year period. The program was organized to relieve the shortage of qualified vocational education teachers. In addition, the student can be self-supporting while developing occupational competency that can be applied in future teaching.

A Teacher Exchange Project was designed in Wisconsin. Vocational, Technical, and Adult Education personnel must have non-educational job experience to be certified to teach that field in Wisconsin. Some meet the requirements, some do not. No provision has been made for vocational teachers to finish or make up the work experience requirement. Also all instructors need to update their methods in their industry field. Therefore, an industry exchange model is needed to update Vocational Education teachers in their field and to complete occupational requirements to be certified. The original concept here was to swap a business person for a vocational teacher. The teacher would work at the business, the worker would teach the vocation. There were two alternatives: 1) The vocational teacher would work at industry and industry would provide worker-teacher on a when available basis to help develop courses, identification of course sequences, preparation of material and evaluate teaching equipment. 2) Vocational teachers would be employed in industry for a period time.

At the Hawkeye Institute of Technology, Waterloo, Iowa, a professional improvement plan that provides instructors with sufficient time to upgrade their skills and knowledge while they continued to teach in their field. This plan provides a financial incentive for instructors to improve and/or maintain their skill levels as well as their pedagogical competencies. The instructor receives a bonus of payment of $100 for each instructional improvement credit earned in a contract year. A maximum of three credits, or $400, is applicable each year. Instructional improvement credits can be accumulated in several ways. One credit is awarded for each of the following:

a. One semester of appropriate college or university credit
b. A minimum of 40 hours of appropriate work in business or industry
c. A minimum of 20 contact hours of appropriate seminar or workshop activity.
d. A minimum of 80 hours at the institute in the study and development of new curriculum concepts as related to the instructors specialty. To make sure that every instructor will have free time to pursue the improvement of his or her instruction, the institute sets aside an equivalent of 20 days each year for that purpose. In addition another 20 days are held in option and may be used to extend the normal 20 days of instructional improvement, if deemed beneficial. The 20 days of instructional improvement do not have to be taken in particular quarters. It is also possible for an instructor to teach a half-load during one quarter with the institute exercising its opinion to assign the instructor to part-time enrollment at the local university in a selected course or courses. Instructors participating in college or university courses for improvement credit are not paid tuition, fees, or other associated costs. Nor does the plan cover all full-time staff. (Ohanneson, 1981, pp.12-15)

The philosophy of Georgia's Office of Vocational Education is that students enrolled in the state's vocational programs are to receive the highest quality of instruction and services possible. Based on this philosophy, in November, 1981, Georgia State Plan for Vocational Staff Development has as its primary aim the fulfillment of student goals by vocational education personnel. Ultimately, the key to a successful vocational personnel development is the maintenance of a base of well-trained personnel (Georgia State,1982,p.4).

The Lake County Area Vocational Technical Center in Eustis, Florida, uses an approach called the Renewal of Occupational Experiences. The approach was developed a few years ago to give instructors the opportunity to return to work in business or industry for the purpose of renewing their occupational skills.

Greenville Technical College in Greenville, South Carolina, operates a Return to Industry Program that began in 1978 when Greenville Tech formed a consortium with two other Southern Carolina Technical Colleges to apply for a faculty and staff development grant from the Appalachian Regional Council.

Dakota County Area Vocational Technical Institute in Rosemont, Minnesota is a multi-level vocational education institution serving secondary, post secondary, adult and special needs populations, with a primary emphasis on the post secondary component. Among the options offered to instructors for professional development is university or college course work taken for the purpose of improving their performance in their assigned roles.

The Meguon-Thiensville School District of the City of Meguon and the Village of Thiensville, Wisconsin, has a staff development policy that requires all teachers to earn four staff development credits every two years, with at least one credit to be earned yearly.

Ferris State College in Big Rapids, Michigan has sponsored a series of workshops since 1975 with a dual purpose: for teachers to obtain technological update and at the same time, gain knowledge and skill in instructional design principles and practices for a specific teaching need.

The College of Agriculture and Home Economics in the Ohio State University has offered a program called "Technical Update of Teachers of Vocational Agriculture," every summer since 1980. The program is coordinated by the Department of Agricultural Education within the college and draws upon the expertise of all the departments of the college in its efforts to bring high school vocational agriculture teachers up to date with current science and technology areas of agriculture.

The Pennsylvania Department of Education operates a program of Technical Updating Workshops. The need for technological update of vocational/technical teachers was first established in September 1980 through a survey.

The State of Connecticut operates a school counselor business/industry internship program in conjunction with two higher education institutions in the state. The program operates for the benefit of school counselors and allows them the opportunity to observe the actual work settings in which their students might eventually be placed to participate in the work that is performed in those settings.

Central Piedmont Community College in Charlotte, North Carolina, conducted a special project in 1980--Project Update: Current Practices Observed in Electrical-Electronics Engineering Technology. The purpose of the project was to identify the technology and technological practices currently in use in local electrical-electronic industry.

Orangeburg-Calhoun Technical College in Orangeburg, South Carolina, operates a personnel exchange program with local industries. The college recognizes instructors' needs to gain knowledge and skills related to technological developments in their fields; further it recognizes that these needs must be met if the community in which both the college and the industries are located is to enjoy continued economic growth and development.

A new program was implemented in the State of Utah in the summer of 1982 for business and office occupations teachers. The aim of the program is to update teachers' technological knowledge and skills by placing them in summer employment at business and industry sites.

Michigan Vocational Education Personnel Development Project (VEPDP). In 1977, the Michigan Association of Area School Administrators (MAASA) decided that there was a need for a statewide personnel development plan for vocational/technical teachers. By mid 1978, Michigan State University (MSU) and Michigan Department of Education's Vocational Technical Education Service had set up a project to update the technical competencies of area vocational center instructors.

The South Carolina Technical Education System (TEC) was founded in 1961 to train people for specific jobs identified within the state. The system performed satisfactorily, training and placing students into jobs with local businesses and industries. However, in the late 1970s, business and industry began asking TEC to provide training for sophisticated technologies that had not yet been developed. TEC personnel decided, therefore, that a new effort was in order to meet this newly found need.

At the University of Southern Maine, vocational teachers can enroll in the University of Southern Maine's Related Occupational Experience Program for academic credit (Woncott,1983,pp.4-35)

A study was implemented in Morris Plains, New Jersey, during 1982. The study investigated:

1. The degree to which vocational teachers acquire new knowledge, skills, or attitudes from part-time work experience.
2. The degree to which vocational teachers transfer newly acquired knowledge, skills, or attitudes to the school and classroom.
3. The impact of this experience on teaching and learning due to the acquisition and transfer of knowledge, skills and

attitudes to the classroom.

A structured interview was devised from this to determine the advantages derived from holding part-time positions in business and industry (Loos,1982,pp.5-8).

Advantages and Disadvantages

At the University of Illinois evidence collected from the cooperating agricultural businessmen and from the high school and junior college teachers enrolled provided insight into the strengths and weaknesses of the four-week problem. The evidence indicated that the teachers and the businessmen liked the concept of using structured occupational experiences. The teacher felt that such experiences, especially if discussed in the classroom, were very beneficial in planning and organizing instruction for teaching.

The teachers also like the general method and approach used for obtaining important technical and occupational experiences. They especially liked the structured questions which were designed to guide them in asking about the organization, management, and operation of the agricultural firms, and they were pleased with the worksheets used to gather operational information about firms.

Most of the agricultural businessmen felt that the teacher should have spent more time with the firms. However, the teachers preferred the half-day spent in the agricultural firm and the two-hour period spent in the classroom. In future years the junior college teachers wanted to obtain their experiences in the same type of firm, while high school teachers were more willing to gain a wider range of experiences in different types of agricultural firms.

In the Kentucky Exchange Program it soon became apparent that the early idea of having industry representatives and vocational teachers trade places would not work in many instances. There is minimum disruption to instruction if teachers take jobs for one and two weeks when school is not in session.

A problem encountered in the Kentucky Exchange concept is that it is often difficult for an industrial craftsperson to bring technical updating to schools because the required equipment is not available in school (Kentucky's Industry Exchange,1981,p.38).

At Colorado State University, one of the many advantages of the program is that it gives direction to the student--he knows where he is going and he knows what his goals are. Equally important, he is provided with a detailed plan for accomplishing his goals.

Because of his orientation to teaching while still learning, he will be more cognizant of methodology, related training, technical training, technical information, and good teaching practices. The occupational skills he learns will have added significance because he knows he will one day be teaching them. Another advantage is the wage-earning capacity, which not only affords the intern the opportunity to be self-supporting while learning, but helps him develop a spirit of independence and accomplishment which can carry over into his future teaching.

Transferring from a junior college to a four-year institution is a problem that many vocational students have faced. Under the Colorado State University Internship Program, the loss of credits should be minimal.

Through adequate planning and supervision in developing the formal agreement between the student and the university, such a program shows promise in relieving the shortage of qualified teachers. Probably the greatest positive factor in the program is the time element. Also, the employment makes it possible for more students to enter the field of education.

There are advantages and disadvantages to the use of work experience internships in providing technological update for vocational/technical teachers. Among these are the quality and nature of instruction provided to teachers in the technology. The nature of instruction is potentially the greatest advantage, while the quality of instruction can, in individual cases, be a disadvantage.

The nature of instruction available to teachers in work experience internships is at least potentially of high quality. In an internship, the teacher has the opportunity to learn from the best possible source--those who work and use technology closely and daily.

Furthermore, the instruction available in an internship can be intensive, substained, and comprehensive for the teacher. Released from the daily concerns of teaching duties assigned to a regular work station in business or industry, the teacher has the opportunity to focus his or her entire attention on the task at hand. During a long internship, the teacher can acquire knowledge and skills in numerous areas of technology--different pieces of equipment, different functions of the technology, different areas of technology, and so on. Finally, instruction can cover not only knowledge of the technology but also hands-on skill in it as well.

The quality of instruction provided in work experience internships, however, can be more problematic. Often supervisors and workers in business and industry offer high quality instruction to teachers and administrators with instruction provided in internships. Doubtless, many business and industry supervisors have had enough experience in training new workers to be quite effective in helping teachers acquire the knowledge and skills they need.

Most work experience internships are rather loosely supervised and reviewed. No matter how well intentioned the participants, it is possible that efficient and effective instruction will not be offered in a given internship. Business and industry personnel are, after all, not educators for the most part; there is always the chance that a teacher will not be taught in a way that allows him or her to learn effectively.

Another obvious disadvantage of work experience internships carried out during released time is the need to use substitute teachers. In high-technology areas, furthermore, adequate substitutes are often not available.

There are two potential disadvantages of university and college course work as an approach to technological update of vocational/technical teachers. One of these is the level of expertise available among university and college faculty. The second is the appropriateness of this activity to teachers specific update needs. One advantage is the information resources of faculty.

While it is no doubt that many individual university and college faculty members are in touch with the latest technological developments of their fields, some question remains as to whether universities and colleges are the best sources of current expertise for vocational teachers. These faculty members have sometimes been away from the work place for as long as secondary and post secondary teachers. They may have had little or no more opportunity to experience first hand the effects of new technology on day-to-day work than secondary and post secondary teachers seeking update.

The appropriateness of university and college work to teachers update needs is also sometimes questionable. University and college campuses often have the same financial limitations as secondary and post secondary vocational education institutions; as a result the physical plant (e.g., tools machinery, equipment) may be no more up to date than that of the vocational teachers' home institutions. Those seeking knowledge of new technology might do well to enroll in university and college courses, while others in need of hands-on experience might be inadequately served by approach.

The advantage of industry observations is that they give instructors a first hand look at technology in place and in operation in the world of work. Instructions can acquire knowledge about technology and its use from the best possible source for their purpose--the actual business and industry sites at which their students hope eventually to be employed.

On the other hand, the nature of the activity limits the effectiveness in providing update to instructors. Also, the relatively informal and loose control of site selection for industry observation can be a disadvantage in the use of this approach.

One significant advantage of workshops is the nature of instruction available to vocational/technical teachers in need of update. Such instruction usually is (and is perceived to be) very specific in nature and oriented to the development of skill as well as knowledge.

A futher advantage of workshops is that they typically tap one of the best possible sources of expertise--business and industry personnel involved in the daily application of technology.

There is, however, one disadvantage to the use of workshops as an approach to technological update. The relatively small amount of time spent in a workshop means that only a relatively small amount of content can be covered.

A major advantage of industry training and updating programs as a means of technological update is that they tap what is the best possible source of expertise. The specificity of content in most industry training and updating programs has a further advantage in providing update.

One more advantage of the nature of instruction provided in industry training and updating programs is the inclusion of both knowledge and skill acquisition in instruction.

One disadvantage of the nature of instruction provided in industry training and updating events is quantity. The short-term nature of the events dictates that only a limited amount of content can be covered if it is to be covered in any depth.

The greatest advantage of part-time employment as an approach to technological update is that the instruction provided comes from the best possible source of expertise--an actual business or industry site at which the technology is applied and used.

Part-time employment also provides the opportunity for instruction in either knowledge or skills or both. The source of expertise is good and appropriate.

One disadvantage of part-time employment is that the content of instruction is dictated by the job position that the teacher is able to obtain. The knowledge and skills that the teacher can acquire will be those used in the particular position. Furthermore, the loose administrative control of part-time employment lessens the likelihood that teachers will carefully and seriously assess their sum update needs.

The main advantage of staff exchanges is the nature of the instruction and expertise available to the teacher. An additional advantage is that they can last long enough for the teacher to absorb a fairly large amount of content in the technology. There is also an advanatage for the vocational program in staff exchanges. The industry person who temporarily assumes teaching duties may bring specialized technical knowledge and skills to the vocational classroom or laboratory. This advantage may be offset by the disadvantage that industry personnel have not usually had training and experience in vocational teaching. There is the further disadvantage that, regardless of industry person's teaching skills, students must adjust to a disruption in instructional routine--a new teacher with a new style and new approach.

Future/Results

The Kentucky Staff Exchange Program is now accepted as the most effective and practical way to achieve technical updating. Repeating industry participants and repeating teachers are common; any teacher may receive technical updating every four to five years, which is one of the goals of the program. The program built up gradually until last year (1981) it approached 500 participants. Future thrusts will be to improve planning and evaluation of training activities. Policies and procedures will continue to be constantly reviewed and revised for greater efficiency, impact and commitment to regular planned professional development. In 1974, it involved 83 vocational teachers and administrators. Now the number involved is up to 360. There are over 1000 vocational teachers and 900 businesses and industries involved. Teacher and administrator enthusiasm continues to increase and so does participation. Overall, linkages between business and industry and the schools have made substantial contributions to the economic revitalization of the region. Clearly, the Staff/Industry Exchange Project has been successful and cost-effective in terms of teacher and instructional upgrading. The program has enabled vocational teachers in Kentucky to stay abreast of modern technology and to pass these skills on to the students who are tomorrow's workers. Teachers, students, and industry have all been winners in their project (Kentucky's Industry Exchange,1982,p.40).

The Vocational Teacher Work-Related Experience Impact Project addressed the issue of the transfer of new skills and attitudes by vocational teachers from their part-time work setting to the school setting.

From the responses of the participants in the study, there seems to be a strong indication that vocational teachers holding part-time positions in their fields related to their instructional activities benefit greatly to their related work experiences. Through the structured interview technique, it was disclosed that almost without exception, teachers believed they were able to transfer their newly acquired knowledge, skill or attitude to the school situation. The comments of the teachers participating in the study indicate there has been a definite impact on their methods in the classroom as a result of experience in their part-time position.

During the five years of the Appalachia Development Grant, Hagerstown Junior College was able to realize the goal of the Return to Industry Project. Fourteen of the college's fifteen occupational program clusters, or 93% were represented in this project. Twenty-four of the thirty-four eligible faculty, or 71%, returned the Industry Participant Outcomes Document which reflected the use value of the program. In virtually every case, the participant was able to transfer service for the host business or industry. From the pedagogical perspective, return to industry has been productive for Hagerstown Junior College. Participating faculty are unanimous in their enthusiasm about the project and evidenced no difficulty in applying their enthusiasm about the project and evidenced no difficulty in applying their learning to the classroom environment.

Does the conclusion of the Appalachia Development Grant signal the end of the return to industry? Most emphatically, NO. During the first year life of the grant, planning evolved with Hagerstown Junior College's professional committee for continuation of the program. The committee unanimously adopted the following resolution in March 1983: since technology continues to change at an ever-increasing rate, the need to maintain some form of return to industry is essential if the college faculty are to remain abreast of what is occurring in the business, industries, and agencies to which we send our graduates. As community college faculty members face the 1980s, the university of knowledge concept remains valid. Return to industry is an effective vehicle for making the concept a reality (Parsons,1983 p.4).

To conclude, throughout the review of this literature, the assumption is made that if vocational education teachers are to be up to date then they must periodically be technically updated. To do this, any one of the ways discussed in this literature would be very beneficial.

The review of literature yielded information on incentives used to persuade vocational teachers to participate in technical updating (Table 1), the length of time in technical updating activities (Table 2) and the cost and number of teachers involved (Table 3).

TABLE 1
INCENTIVES USED IN TECHNICAL UPDATING

STATE	INCENTIVE
Tennessee	Training and Technology Project--degree credit provided through the University of Tennessee.
Wisconsin	Stout State University. School/Industry cooperation--continued to receive salaries from both school and industry. Industry placed a person in the school to teach the class which the instructor taught. The company--Deere and Company--paid the living expenses of both participants and the traveling expenses of its supervisor; also, the expenses of the instructor.
Wayne State University	Cooperative Work-Study. Work experience converted into college credit.
San Jose State University	In-Service Education Programs. Industrial study trips, short-term industrial schools with organized collegiate programs of teacher education. Money (salary) given.
Bowling Green State University	"Internship in Business Education" required to complete this work experience program before receiving their degree--College credit given.
Bucks County, Pennsylvania, Temple University	Directed Observation of Elementary Office Positions Program. Participants received a stipend for the week's activities.
Virginia Polytechnic Institute	Directed Occupational Experience. Received college credit.
University of Illinois	Teachers obtained a variety of unstructured experiences of their own choice. Money was provided for substitute teachers.
Louisanna State University	Summer Internship Program. Three hours graduate credit given.
Colorado State University	Vocational Internship Program. Students earn both their Vocational credentials and BS degree.
Maryland--Hagerstown Jr. College	Return to Industry. Many business/industries invited participants back. One credit hour given a week.

(**TABLE 1** Continued)

STATE	INCENTIVE
New Jersey	Vocational Teacher Work-Related Experience Impact Project Part-time Work (salary) gain knowledge of the latest developments in their chosen field.
Georgia	Staff Development Plan. Certification credit given.
Kentucky	Staff Exchange Program. Reimbursed teachers their money.
Florida Lake County Area Vocational Technical Center	Renewal of Occupational Experience. Received regular teaching salary while participating.
South Carolina--Greenville Tech.	Return to Industry--paid for substitute teachers.
Minnesota--Dakota County Area Vocational Technical Center	Tuition reimbursed for college coursework.
Michigan--Ferris State College	Workshops. College credit given.
Ohio	Professional Improvement while on the job. Bonus payment of $100 for each credit taken. Up to 3 credits a year.

TABLE 2
LENGTH OF TIME USED IN TECHNICAL UPDATING

STATE	LENGTH OF TIME
Tennessee	Short-classes in leadership, teaching methods etc., also technical seminars.
Wayne State University	Register for 4 to 10 quarter hours during successive terms.
San Jose State University	Half or full-day study trips, 6 days working or observing in industry.
Bowling Green State University	40 clock hours of work for each quarter-hour of college credit.
Buck Co. Penn. Temple	Lasted one week.
Virginia Polytechnic	Student enters the senior block in Spring Quarter of his junior year enrolling in courses that prepare him for the first phase of his required occupational experience. Takes place during the summer.
University of Illinois	4 week experimental cooperative education program.
Lousianna State	3 week summer internship program.
Colorado State	BS degree within a 5 year period.
Maryland--Harford Jr. College	Maximum 2 weeks.
San Jose State University	4 weeks (20 days) full time (35-40) plus 2 weeks curriculum activity.
Georgia	Workshop which lasted 5 days.
Florida-Lake County	At least 5 days.
South Carolina	Activities lasted one quarter.

TABLE 3
COST AND NUMBER OF PERSONS SERVED

STATE	People and Cost Involved
Maryland, Harford Junior College	14 of 15 of the college's program clusters were represented. 93% 24 of 34 eligible faculty returned to industry. 71%
New Jersey	51 randomly selected vocational teachers holding part-time jobs.
San Jose State	Typical summer update 6 wks salary = teaching summer 16 hrs/wk x 6 wks at 20 — 1,920 Graphic Artist 30 hrs at 10 — 300 Media Materials — 100 2,320
Wisconsin Stout State	10 Vocational Education Personnel Federal Funds 45% 3,123 Matching Funds 55% 3,817 Total Cost 100% 6,940

TABLE 4 presents the comparison of percent of respondents who requested computer updating as part of their technical updating needs. More than half of the Business Education teachers responding requested updating in the use of computers. This information is important in that it shows the extent to which teachers in the various service areas desire to either expand or improve their computer skills.

TABLE 4
COMPUTER TERMS USED BY REGION AND SERVICE AREA

	REGION I	REGION II	REGION III	REGION IV	REGION V	TOTAL
AGRIBUSINESS						
Total Terms	41	54	47	37	30	30
	17%	9%	19%	14%	7%	13%
Computer terms	7	5	9	5	2	28
BUSINESS EDUCATION						
Total Terms	58	69	91	98	108	424
	67%	64%	53%	58%	55%	58%
Computer Terms	39	44	48	57	59	247
DIVERSIFIED OCCUPATIONS						
Total Terms	18	9	19	28	62	136
	44%	22%	26%	29%	27%	29%
Computer Terms	8	2	5	8	17	40
HEALTH OCCUPATIONS						
Total Terms	29	71	61	107	120	388
	21%	18%	13%	14%	9%	15%
Computer Terms	6	13	8	15	11	53
HOME ECONOMICS						
Total Terms	48	52	75	70	85	330
	19%	19%	20%	20%	16%	19%
Computer Terms	9	10	15	14	14	62
INDUSTRIAL ARTS						
Total Terms	22	70	53	46	118	309
	23%	26%	38%	33%	17%	25%
Computer Terms	5	18	20	15	20	78
INDUSTRIAL EDUCATION						
Total Terms	128	139	124	179	196	766
	20%	13%	16%	23%	19%	19%
Computer Terms	25	18	20	42	37	142
DISTRIBUTIVE EDUCATION						
Total Terms	14	5	33	24	24	100
	43%	100%	30%	38%	38%	42%
Computer Terms	6	5	13	9	9	42
PUBLIC SERVICE						
Total Terms	12	3	6	22	8	51
	25%	0%	33%	5%	13%	14%
Computer Terms	3	0	2	1	1	7
INDIVIDUALIZED MANPOWER TRAINING SYSTEM						
Total Terms		1			10	11
		0%			0%	0%
Computer Terms		0			0	0
HANDICAPPED						
Total Terms			4	5	7	16
			25%	20%	0%	13%
Computer Terms			1	1	0	2

TOTAL TERMS	2,740	
		26%
TOTAL COMPUTER TERMS	701	

TECHNICAL UPDATING NEEDS FOR EACH SERVICE AREA REPORTED IN PRIORITY ORDER WITH POSSIBLE TRAINING SOURCES

Agribusiness............Summary

Business Education.......Summary

Distributive Education...Summary

Diversified Occupations..Summary

Handicapped.............Summary

Health Education.........Summary
Specific Categories

Home Economics...........Summary
Specific Categories

Industrial Arts..........Summary not in priority order

Industrial Education.....Summary not in priority order
Specific Categories

Public Service..........Summary

VOCATIONAL EDUCATION
TECHNICAL UPDATING NEEDS

SERVICE AREA: Agribusiness
CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1.	Plant Propagation Technique	University of Florida Gainesville, FL (Br. Beeman)
2.	Agricultural Marketing	University of Florida Gainesville, FL
3.	Agricultural Management	University of Florida Gainesville, FL
4.	Greenhouse Operations	C.B. Hughes Nursery New Smyrna Beach, FL
5.	Weed Identification and Control	University of Florida Gainesville, FL
6.	Insect Identification and Control	University of Florida OIN-Hort Department Gainesville, FL
7.	Agricultural Equipment	University of Florida Gainesville, FL
8.	Tractor Serv. & Maintenance	Ford Tractor Company Polk Tractor Company Winter Haven, FL
9.	Crop Production	University of Florida Gainesville, FL
10.	Beef Production	Polk Co. Extension Service Winter Haven, FL

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: Business Education

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1.	Electronic Typewriter	IBM, West Palm Beach, FL
		Santa Fe Community College Gainesville, FL
		Travis Voc-Tech Center Lakeland, FL (Thelia Harris)
		Erwin Center Tampa, FL
		A.B. Dick, Miami, FL
2.	Word Processing	Radio Shack Computer Center Jacksonville, FL (Earl Altwater)
		University of Central Florida (Dr. Ernest Miller)
		St. Pete Jr. College (Mr. William Hartwell)
		Florida Junior College
		Pensacola Jr. College
		Seville Research, Inc. Pensacola, FL (Carrie Morror)
		Indian River Community College
3.	Dictation Equipment	Tallahassee Community College
4.	Computerized Filing	Radio Shack Sarasota, FL
5.	Computerized Accounting	University of Central Florida (Dr. Ernest Miller
		George Stone Voc-Tech
		University of West Florida
		University of South Florida
		University of North Florida
		Florida Institute of CPA's Tallahassee, FL (continued)

VOCATIONAL EDUCATION
TECHNICAL UPDATING NEEDS

SERVICE AREA: Business Education

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
5.	Computerized Accounting	Largo C & I Largo, FL (Faye Brooks)
		Dade Community College
6.	Records Management	Radio Shack
7.	Keypunch Operations	Brevard Community College Cocoa, FL
8.	Shorthand	Hillsborough County Court
		Greggs Publishing Company
9.	Math Skills	University of North Florida (Dr. Sandra Kirk)
10.	Computerized Communications	Rollins College Orlando, FL (Dr. Emory Giles)

VOCATIONAL EDUCATION
TECHNICAL UPDATING NEEDS

SERVICE AREA: Distributive Education

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1.	Cash Registers	Pensacola Jr. College
2.	Merchandise Mark-ups	Burdine's Tampa, FL (Mr. Pete Feliner)
3.	Store Equipment	Sears
4.	Display Construction	Burdine's Tampa, FL (Mr. Pete Feliner)
5.	Advertising	Ft. Lauderdale & Miami Ad Clubs
6.	Telephone Techniques	Southern Bell
7.	Sales Management	Ft. Lauderdale Sales & Marketing Executive
8.	Credit Laws	University of South Florida (Dr. Pottersom) Florida Atlantic University--School of Business
9.	Management Techniques	Local Retailers
10.	Media Uses	University of South Florida Ft. Myers, FL Media Practitioners

VOCATIONAL EDUCATION
TECHNICAL UPDATING NEEDS

SERVICE AREA: Diversified Occupations

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1.	Word Processing	Jacksonville Banks Jacksonville, FL
		Lee County Vocational School (Ron Petrik)
		Florida International University Miami, FL
		Broward Community College
		IBM Corp., Miami, FL
		Farm Bureau
		Miami Voc-Tech High School
2.	Secretarial Skills	Voc-Tech Center Inverness, FL
3.	Food Service	Voc-Tech Center Inverness, FL
4.	Cash ering Techniques	National Cash Register Company Miami, FL
5.	Construction Trades	University of Central Florida
6.	Landscaping Maintenance	University of South Florida
7.	Computer Applications	University of South Florida (Dr. Danenburg)
		Radio Shack Training Department Altamonte Springs, FL
		Nova University
8.	Work Ethics	Miami - Dade - Miami
9.	On-The-Job Training	Voc-Tech Center Inverness, FL
10.	Money Investment	Certified Public Accountants

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: Handicapped

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1.	Plant Management	Agricultural Extension Office Okeechobee, FL
2.	Low Maintenance Landscaping	IFAS, Mounts Hort Learning Center West Palm Beach, FL
3.	Lawn Maintenance	Miami Dorsey Skill Center Miami, FL (Mr. Lee E. Afford)
4.	Home Landscaping	Miami Dorsey Skill Center Miami, FL (Mr. Lee E. Afford)
5.	Soil Updates	Miami Dorsey Skill Center Miami, FL (Mr. Lee E. Afford)
6.	Computerized Agriculture	University of South Florida Tampa, FL
7.	Insect Updates	Miami Dorsey Skill Center Miami, FL (Mr. Lee E. Afford)
8.	Pesticide Updates	Agricultural Extension Office Okeechobee, FL (Willie Schutz)
9.	Computerized Home Economics	University of South Florida Tampa, FL
10.	Childbirth Education	Lamaze Childbirth Educator (Sue Monacco)

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: Health Occupations

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1.	Medical Surgery Nursing	Bethesda Memorial Hospital Boynton Beach, FL (Ms. Circo)
2.	Cardiac Care	Morton Plant Hospital Clearwater, FL
3.	ER Nursing	Broward General Medical Center Ft. Lauderdale, FL (M. Hagen)
4.	Nursing Laws	Nova Law School (Bill Stafford)
5.	Infection Control	Orlando Regional Medical Center Orlando, FL (Ms.Roberta Parker,RN) Greater Orange Park Comm. Hospital Orange Park, FL (JoAnn Nolin, RN)
6.	Alcoholic Care	
7.	High Risk Maternity	Univ. of South FL Medical Clinics Tampa, FL (Joan Drukker)
8.	Drug Interaction	Broward General Medical Center Ft. Lauderdale, FL (Frank Crane, Ph.D.)
9.	Geriatric Needs	Pensacola Jr. College Pensacola, FL State Dept. of Education Tallahassee, FL (Ms. Etta McCullough)
10.	Critical Care Nursing	Boca Raton Community Hospital Boca Raton, FL NFRH or AGH Hospitals Gainesville, FL (Ann Smith)

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: Health Education (Computerized Nursing)

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1	Computerized Labs	McAuto Health Services Division A. M. Randall Hazelwood, MO Hillsborough Community College Tampa, FL
2	Word Processing	Broward Community College Business Department
3	Computerized Medication	American Medical Record Assoc. Chicago, IL University of West Florida Pensacola, FL Hollywood Medical Center Hollywood, FL
4	Computerized Case Management	
5	Computer Programming	Barry University Miami, FL University of South Florida CAI Center Tampa, FL
6	Computer Interfacing	
7	Computerized Office	University of South Florida Tampa, FL
8	Computer Application	
9	Computer Skills	Santa Fe Community College Gainesville, FL

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: Health Education (Dental)

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1	Computerized Dentistry	Pensacola Junior College Pensacola, FL
2	Dental Materials & Equipment	University of North Carolina Chapel Hill, NC L. D. Coulk Company
3	Dental Techniques	University of Florida Gainesville, FL
4	Dental Hygiene	University of Florida Gainesville, FL
5	Peridontal Diseases	University of Florida Dr. Sam Lowe Gainesville, FL
6	Dental Evaluation	University of Florida Margaret Morgan Gainesville, FL
7	Dental Laws	University of Florida Dr. Leo Gainesville, FL
8	Dental Positioning	University of Florida Dr. Don Antonson Gainesville, FL
9	Dental Specialities	
10	Dental Radiography	National Institute of Health Bethesda, MD

VOCATIONAL EDUCATION
TECHNICAL UPDATING NEEDS

SERVICE AREA: Health Education (IV Technology)

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1	IV Therapy	Winter Park Hospital Mrs. Judy Perez Winter Park, FL Boca Raton Community Hospital Mrs. Love Boca Raton, FL
2	IV Equipment	
3	IV Electronics	Morton Plant Hospital Clearwater, FL
4	IV Monitor	
5	IV Techniques	Waterman Memorial Hospital Inservice Department Eustis, FL

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: Health Education (Obstetrics & Pediatrics)

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1	Fetal Monitoring	Lykes Memorial Hospital Mickey Beeman Brooksville, FL Pensacola Junior College Pensacola, FL Bayfront Medical Center St. Petersburg, FL
2	High Risk Newborn	University of Florida Gainesville, FL
3	High Risk Maternity	University of South Florida Joan Drukker Tampa, FL
4	Pediatrics Care	
5	Obstetrics Skills	Bethesda Hospital Mrs. Priscilla Circo Boynton, FL
6	Electronic Labor	

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: Health Education (Drugs)

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1	Drug Interaction	
2	Drug Updates	
3	Drug Monitoring	Broward General Medical Center Frank Crane Fort Lauderdale, FL
4	Drug Theraphy	Jackson Hospital Marianna, FL
5	Medication Responses	

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: Health Education (Emergency)

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1	ER Procedures	Hialeah Hospital
2	First Aid	CF CC Mr. Dick Talbot
3	Patient Assessment	
4	Patient Care	Barry University Miami, FL
5	Paramedic Skills	Vallencia Community College Valerie Harris Orlando, FL
6	Paramedic Training	

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: Health Education (Eye)

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1	Contact Lenses	
2	Eyeglass Repair	Hilco
3	Eye Machines	
4	Computerized Lenses	
5	Facet Lenses	Clarksdale Lab Jack Strickland Jacksonville, FL
6	Lens Grinding	

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: Health Education (Geriatrics)

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1	Geriatric Nutrition	Pensacola Junior College Pensacola, FL
2	Geriatric Needs	Pensacola Junior College Pensacola, FL
3	Geriatric Trends	State Department of Education Ms Etta McCollough Tallahassee, FL

VOCATIONAL EDUCATION
TECHNICAL UPDATING NEEDS

SERVICE AREA: Health Education (Mental Health)
CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1	Human Relations	
2	Emotional Care	Florida Hospital Orlando, FL
3	Group Therapy	UM School of Cont. Studies Prog of BY Miami, FL
4	Handicapped Counseling	
5	Human Development	
6	Patient Communications	Pensacola Junior College Pensacola, FL
7	Public Services	
8	Stress Management	

VOCATIONAL EDUCATION
TECHNICAL UPDATING NEEDS

SERVICE AREA: Health Education (Operating Room)

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1	OR Procedures	Hialeah Hospital
2	Med-Surg Care	Broward General Medical Care Mr. Hagen Fort Lauderdale, FL
3	Neuro Surgery Updates	
4	Operating Room Drills	
5	Operating Room Laser	
6	Surgery Techniques	

VOCATIONAL EDUCATION
TECHNICAL UPDATING NEEDS

SERVICE AREA: Health Education (ICU Nursing)

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1	ICU Procedures	Hialeah Hospital
2	ICU Skills	Jackson Memorial Hospital
3	Trama Life Support	ATLS Course College of Emergency Phy
4	Analysis Machines	Beckman Instruments, Inc. Norcross, GA
5	Electronic Monitoring	
6	ICU Experiences	St. Vincent's Medical Center Jacksonville, FL

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: Health Education (Radiology)

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1	Computerized Radiology	
2	Radiology Procedures	Miami Dade Community College
3	Radiology Techniques	E. C. D. S.
4	Radiology Updates	Jackson Memorial Hospital
5	X-Ray Safety	University of Florida Gainesville, FL
7	X-Ray Techniques	
8	Digital X-Ray	

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: Health Education (Nursing Science)

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1	ER Nursing	Broward General Medical Center M. Hagen Fort Lauderdale, FL
2	Gerentology Nursing	University of South Florida Dr. Gwen McDonald Tampa, FL
3	ICU Nursing	Boca Raton Community Hospital Boca Raton, FL
4	Med-Surg Nursing	Broward General Medical Center M. Hagen Fort Lauderdale, FL
5	Postoperative Nursing	
6	Critical Care Nursing	NFRS or AGH Hospitals Ann Smith Gainesville, FL
7	Nursing Laws	
8	Holistic Nursing	
9	Nursing Routines	

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: Health Education (Cardiac Care)

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1	Cardiac Catherization	Morton Plant Hospital Clearwater, FL
2	Cardiac Drugs	
3	Cardiac Monitoring	Bayfront Medical Center St. Petersburg, FL
4	EKG	Dr. Samera Health Clinic Contact: Sammy Orange Park, FL
5	Intra-Aortic Balloon Pumping	Shands Teaching Hospital Gainesville, FL
6	Open Heart Procedures	Baylor Houston, TX
7	Central Venus Pressure	
8	Cardio Pulmonary Life Support	Heart Association
9	Cardiac Surgery	Florida Hospital Orlando, FL
10	Cardio Vascular ICU	Baptist Medical Center Carol Whitiker Jacksonville, FL

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: Health Education (Medical Equipment)

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1	Anesthesia Equipment	
2	Monitoring Equipment	
3	Orthopedic Equipment	
4	Rehabilitative Equipment	
5	Restraining Devices	
6	Diagnostic Equipment	
7	IV Equipment	

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: Home Economics

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1.	Sewing	Superior Surgical Seminole, FL
		Fabric Mart Naples, FL (Goldie, Oross, CCPS)
		Silver Springs Sportswear Silver Springs, FL
2.	Computerized Home Economics	Brevard Community College (Eleanor Rickey)
		FL International University Miami, FL
		Nova University Coral Springs, FL
		Okaloosa-Walton Jr. College (Mrs. Flora Conger)
		FIT, Melbourne, FL
		Radio Shack, Sarasota, FL
		FL Atlantic University Boca Raton, FL
3.	Food Preparation	Walt Disney World Orlando, FL (Jim Armstrong, Food Service Director)
		Ely High Pompano Beach, FL (Mr. Walter Peterson)
		Holiday House, Inc. Deland, FL (Mr. Bob Cook)
		Daytona Beach Community College Daytona Beach, FL
		Burger King
		(continued)

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: Home Economics

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
4.	Child Care	Brevard Community College--Child Study Center Cocoa, FL Kreative Kids Learning Center Seminole, FL Polk Voc-Tech Panama City, FL Okaloosa-Walton Jr. College Ft. Walton Beach, FL (Flora Conger) Traviss Voc-Tech Lakeland, FL Florida State University Tallahassee, FL
5.	Interior Design	Cardinal Industries Sanford, FL (Mrs. Robel) Kitty Scott Furniture Ormond Beach, FL (Dee Dee Sounders)
6.	Home Economics Entrepreneur	Florida State University Tallahassee, FL
7.	Family Living	Brevard County School Board Titusville, FL
8.	Handicapped	Seminole Community College (Sam Brashear)
9.	Consumerism	

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: Home Economics (Computerized Home Economics)

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1	Computerized Sewing	Florida International University Miami, FL
2	Computerized Sewing	Red Lobster Inns
		The American Dietetic Association Chicago, Illinois
3	Computerized Inventory	Erwin Voc-Tech Center
4	Computerized Graphics	
5	Software Selection	
6	Computerized Finance	Adult Voc Ed Joyce Niedenthal Fort Lauderdale
7	Computer Training	Radio Shack
8	Computer Programming	University of West Florida Pensacola, FL
9	Software Integration	

VOCATIONAL EDUCATION
TECHNICAL UPDATING NEEDS

SERVICE AREA: Home Economics (Sewing)

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1	Sewing Machines	Palatka High School
2	Sewing Techniques	Stretch & Sew Fabrics Orlando, FL
3	Textile Trends	Florida International University Miami, FL
4	Pattern Making	Florida State University Betty Morrow
		Fashion Institute of Technology Bob Taylor New York, NY
5	Alterations	
6	Fiber Technology	
7	Home Sewing	
8	Fashion Purchases	
9	Industrial Sewing	Silver Springs Sportswear Silver Springs, FL

VOCATIONAL EDUCATION
TECHNICAL UPDATING NEEDS

SERVICE AREA: Home Economics (Family Living)
CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1	Drug Abuse	
2	Crisis Management	
3	Divorce Effects	
4	Family Planning	
5	Future Lifestyles	
6	Homemaking Legislation	
7	Housekeeping Skills	
8	Managing Change	

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: Home Economics (Handicapped)

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1	Handicapped Adults	
2	Home Economics Remediation	
3	Handicapped Codes	
4	Handicapped Employability	
5	Sensory Integration	Shands Hospital Gainesville, FL

VOCATIONAL EDUCATION
TECHNICAL UPDATING NEEDS

SERVICE AREA: Home Economics (Consumerism)

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1	Energy Conservation	
2	Home Construction	NAHB
3	Solar Energy	
4	Consumer Laws	
5	Automobile Purchases	
6	Building Codes	
7	Home Maintenance	
8	Finance Trends	
9	Banking Knowledge	
10	Budgets	

VOCATIONAL EDUCATION
TECHNICAL UPDATING NEEDS

SERVICE AREA: Home Economics (Food Preparation)

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1	Cooking Equipment	Miami Lakes Tech Miami, FL Robert Morgan Vo-Tech Center
2	Microwave Cooking	Roth's Electronics Indialantic, FL
3	Catering Services	Florida International University Dennis Marzella
4	Commercial Food	
5	Anorexia Nervosa	
6	Nutrition	P.B. Dist. Diet Association Chicago, IL Okaloosa Walton Junior College
7	Convenience Foods	
8	Food Purchasing	Florida State University Tallahassee, FL
9	Food Careers	Sorrentino's Catering
10	Cooking Techniques	

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: Home Economics (Childcare)

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1	Day Care Management	Kindercare Tallahassee, FL
2	Child Discipline	Brevard Community College Child Study Center Cocoa, FL
3	Child Abuse	HRS Nation Child Abuse Chicago, IL
4	Self Concept	
5	Emotionally Handicapped Teaching	
6	School Readiness	
7	Adolescent Concerns	
8	Teaching Techniques	Miami Dade Community College Miami, FL
9	Pre-School Needs	University of South Florida Tampa, FL
10	Pre-School Curriculum	University of Florida Gainesville, FL

VOCATIONAL EDUCATION
TECHNICAL UPDATING NEEDS

SERVICE AREA: Home Economics (Interior Design)

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1	Drapery Construction	Sue Gorden Draperies Ormond Beach, FL
2	Furniture Repair	Kitty Scott Furniture Ormond Beach, FL
3	Upholstery	Refinishing D'Elegance & Upholstery Ormond Beach, FL
4	Flower Arranging	
5	Lighting Information	
6	Quilting Techniques	Sewing Circle St. Petersburg, FL

VOCATIONAL EDUCATION
TECHNICAL UPDATING NEEDS

SERVICE AREA: Home Economics (Home Economics Entrepreneur)

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1	Advertising Techniques	
2	Management Techniques	Miami Dade Community College Miami, FL Florida International University Miami, FL
3	Time Management	
4	Industry Evaluation	
5	Job Information	
6	Finance Trends	
7	Equipment & Machines	Sarasota Voc-Tech Center Sarasota, FL
8	Crime Detection	Police Instructors Miami, FL
9	Communication Techniques	
10	Business Establishment	Florida International University Miami, FL

VOCATIONAL EDUCATION
TECHNICAL UPDATING NEEDS

SERVICE AREA: Industrial Arts

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
	Welding	NEEDS NOT IN PRIORITY ORDER
	Automotive	
	Laser-Robotics-Fiber Optics	
	Wood Working	
	Masonry	
	Machine Shop	
	Auto Body	
	Major Appliance Repair	
	Computers	
	Drafting	
	Commercial Arts	

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: Industrial Education

CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
	Air Conditioning and Heating	NEEDS NOT IN PRIORITY ORDER
	Electronics	
	Auto Mechanics	
	Small Gasoline Engines	
	Welding	
	Diesel Engines	
	Commercial Art	
	Major Appliances Repair	
	Auto Body	
	Machine Shop	
	Robotics	
	Photography	
	Cosmotology	
	Electrical Wiring	
	Food Service	
	Drafting (Art & Mechanical)	
	Carpentry	
	Plumbing	
	Aircraft	
	Marine Mechanics	

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: INDUSTRIAL EDUCATION (Food Service)

CATEGORY: SUMMARY

Priority Order	Identified Need	Potential Training Sources
1.	Food Preparation	Walt Disney World Orlando, FL (Jim Armstrong, Food Service Dir.) Ely High Pampano Beach, FL (Mr. Walter Peterson) Holiday House, Inc. Deland, FL (Mr. Bob Cook) Daytona Beach Community College Daytona Beach, FL (Chef Klaus Friedrick) Burger King National Restaurant Association Chicago, IL
2.	Food Management	National Restaurant Association Chicago, IL
3.	Food Costs	National Restaurant Association Washington D.C.
4.	Banquet Preparation	National Restaurant Association Washington D.C.
5.	Food Industry	National Restaurant Association Washington D.C.
6.	Frozen Foods	University of South Florida Tampa, FL (Clarence Collier)
7.	Microwave Cooking	Luide Mixon Pensacola, FL
8.	Personnel Training	

VOCATIONAL EDUCATION
TECHNICAL UPDATING NEEDS

SERVICE AREA: INDUSTRIAL EDUCATION (Aircraft)
CATEGORY: SUMMARY

Priority Order	Identified Need	Potential Training Sources
1.	Aircraft Construction	Piper Aircraft Company Vero Beach, FL
2.	Aircraft Updates	P & WH United Technology WPB Division
		Bell Hellicopter Training Center Fort Worth, TX
3.	Boeing Factory	Boeing Aircraft Company Spokane, WA
4.	Flight Theory	Burnside-Ott Aviation Training Ctr. Miami, FL
5.	Douglas DC-10	Doughats Aircraft Company Los Angeles, CA
6.	Flight Physiology	Ohio State University Dept. of Aviation Columbus, OH
7.	Air Traffic Control	ARTC Center Miami, FL
8.	Aircraft AC	Tampa Airport Services Tampa, FL

VOCATIONAL EDUCATION
TECHNICAL UPDATING NEEDS

SERVICE AREA: INDUSTRIAL EDUCATION (Machine Shop)
CATEGORY: SUMMARY

Priority Order	Identified Need	Potential Training Sources
1.	Lathe Operations	Maruka Machinery Corporation Orlando, FL
2.	Milling Machine	Burke Division Powermatic Houdaille Cincinnati, OH Bridgeport Machine Service Center Norcross, GA (Donna Mason)
3.	Computerized Lathe	South Bend Lathe South Bend, IN
4.	Lathe Programming	Maruka Mori Center Orlando, FL (Jim Hawley)
5.	Computerized Milling	Bridgeport Machine Division Norcross, GA (Larry)
6.	Electronic Measuring	Foxboro Company Foxboro, MA

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: INDUSTRIAL EDUCATION (Electrical Wiring)
CATEGORY: SUMMARY

Priority Order	Identified Need	Potential Training Sources
1.	Electrical Codes	National Fire Protection Assoc. Quincy, MS NFPA
2.	Wiring	
3.	Electrical Safety	Haney Voc-Tech Panama City, FL (Mr. Sexton & Mr. Thomas)
4.	Electrical Hookups	Calkins Electric Company Deland, FL (Richard Calkins)
5.	Electrical Components	Calkins Electric Compnay Deland, FL (Richard Calkins)
6.	Motor Repair	Reliance Electric (Jim Arnol) Electric APPV Service Assoc. St. Louis, MO (Dave Giphart)
7.	Solar Electricity	Mother Earth Hendersonville, NC Energy Systems, Inc. El Cajon, CA
8.	Fire Alarm	Simplex
9.	Solar Energy	Gulf Power Company Pensacola, FL

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: INDUSTRIAL EDUCATION (Commercial Art--Printing)

CATEGORY: SUMMARY

Priority Order	Identified Need	Potential Training Sources
1.	Computerized Typesetting	A & M Miami, FL Miami-Dade Graphic Arts Miami, FL Spence Creek High School Volusia, FL (Tom Wetzler)
2.	Printing Equipment	A.B. Dick Company Tampa, FL
3.	Multicolor Press	Hialeah Metal Spinning Hialeah, FL
4.	Duplicator Press	
5.	Sheet Fed Offset	A.B. Dick Company Tampa, FL A.M. Multilith Corp. Miami, FL
6.	Airbrush Techniques	Rochester Institute of Technology Rochester, NY
7.	Phototypesetting	Graphic Arts Tech Foundation Pittsburgh, PA (Beneuento)
8.	Graphic Publications	Graphic Arts Tech Foundation Pittsburgh, PA (Dr. Jack Jimich) Sperry Corporation Clearwater, FL (Mr. Gene Markham)
9.	Portrait Lighting	Van Moore Studio Seminars Greenville, NC (Van Moore)
10.	Computerized Art	

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: INDUSTRIAL EDUCATION (Drafting--Art & Mechanical)

CATEGORY: SUMMARY

Priority Order	Identified Need	Potential Training Sources
1.	Computer Aided Drafting	Learning Resource Center St. Petersburg, FL (Professor E.G. Berger) JS Staedler/CAD Division Canoga Park, CA (William R. Nichols) Manatee Jr. College Venice, FL (Mr. Bob Campell) Don Jaeger Corporation Winter Park, FL (Don Jaeger)
2.	Mechanical Drafting	Davy - McKee Lakeland, FL (Mr. Ray Behunin)
3.	Drafting Standards	
4.	Architectural Drafting	Daytona Beach Community College Daytona Beach, FL
5.	Computer Graphics	Graphic Arts Tech Foundation Pittsburgh, PA (Dr. Jack Jimich) Radio Shack Orlando, FL
6.	Quality Graphics	Rochester Institute of Technology Rochester, NY
7.	Overlay Drafting	

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: INDUSTRIAL EDUCATION (Small Gasoline Engines)

CATEGORY: SUMMARY

Priority Order	Identified Need	Potential Training Sources
1.	Tecumseh Ignition	Spencer Motors Tampa, FL
2.	Lawn Mower Engines	
3.	Chain Saw	DC Jaegar Corporation Orlando, FL
4.	Lawson Engines	
5.	Electronic Instrumentation	
6.	Power Mower Safety	Outdoor Power Equipment Institute
7.	Briggs & Stratton	
8.	Engine Repair	Briggs & Stratton Corporation Milwaukee, WS
9.	Lawn Boy Servicing	
10.	Continental Motors	

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: INDUSTRIAL EDUCATION (Cosmetology)
CATEGORY: SUMMARY

Priority Order	Identified Need	Potential Training Sources
1.	Hair Cutting	NHCA St. Louis, MO
2.	Hair Color	Revlon Company Roux Labs Jacksonville, FL Clairol, Inc. New York, NY (Mel Josephs)
3.	Hair Design	National Hairdressers & Cosmotologists AS St. Louis, MO Redkin Canoga Park, CA (Esa Wensel)
4.	Permanent Techniques	
5.	Product Knowledge	
6.	Permanent Theory	Lustra Silk Company (Mrs. Dawson)
7.	Salesmanship	
8.	Chemical Relaxing	
9.	Salon Mgt. & Procedures	
10.	Skin Care	Aestheticians Int'l Association Dallas, TX Christine Valmy, Inc. New York, NY (Judith L. O'Connell) NHCA St. Louis, MO

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: INDUSTRIAL EDUCATION (Electronics)

CATEGORY: SUMMARY

Priority Order	Identified Need	Potential Training Sources
1.	Digital Circuits	Lab Volt Dunedin, FL (Mr. Dave Aukamp)
2.	Solid State Electronics	Johnson Control Oak Brook, IL
3.	Video Recorder	Sony
4.	Servicing Microcomputers	Tektronix
5.	Interactive Devices	Sony Corporation New York, NY
6.	Op-amp Circuits	University of Florida Gainesville, FL (Dr. Smith)
7.	Solid State Circuits	Carrier Corporation
8.	Microtransmissions	
9.	Chip Interfacing	

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: INDUSTRIAL EDUCATION (Carpentry)
CATEGORY: SUMMARY

Priority Order	Identified Need	Potential Training Sources
1.	Building Codes	Southern Building Code Congress International Birmingham, AL County Gout Agency
2.	Energy Saving Construction	
3.	Construction Techniques	Voc-Tech Building Trades (Mr. L. Oglesby) Florida Building Association Tallahassee, FL
4.	Construction Management	University of Florida Gainesville, FL
5.	Sub-contracting Knowledge	
6.	Energy Codes	Departmant of Energy Tallahassee, FL
7.	Manufactured Buildings	
8.	Door Framing	Charles Coleman Homes Deland, FL (Robert Coleman)
9.	Codes Workshops	
10.	Home Construction	

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: INDUSTRIAL EDUCATION (Marine Mechanics)
CATEGORY: SUMMARY

Priority Order	Identified Need	Potential Training Sources
1.	OMC Mechanics	Outboard Marine Corporation Miami, FL (Mr. Rich Findlow)
2.	Mercury Mechanics	Mercury Marine Norcross, GA (Dennis Linrert)
		Mercury Marine Norcross, GA (Mr. Ed Ladue)
3.	Economic Systems	OMC Training Center Miami, FL
4.	Evinrude-Johnson Systems	OMC Training Center Miami, FL (Rick Findlow)
5.	Volvo Mechanics	Powerhouse Marine Miami, FL (Mr. Harry Saunders)
		Anchor Marine Products Bradenton, FL (Lee Gilfroy)

VOCATIONAL EDUCATION
TECHNICAL UPDATING NEEDS

SERVICE AREA: INDUSTRIAL EDUCATION (Air Conditioning & Heating)
CATEGORY: SUMMARY

Priority Order	Identified Need	Potential Training Sources
1.	Control Systems	
2.	Fiberglass Duct Board	Owens/Corning Tampa, FL (Mr. Starnes)
3.	Climate Controls	
4.	Solar Heating	Florida Solar Energy Center Engineering and AP Cape Canaveral, FL
5.	Solid State Controls	Square D Carrier Corporation Syracuse, NY
6.	High Efficiency Systems	
7.	Micro-processor Heat Pumps	
8.	Ice Maker Systems	State Department of Education Tallahassee, FL (Tal Rushing) Scottsman Ice Machine Company Albert bea, MN
9.	AC Systems	
10.	Commercial Refrigeration	

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: INDUSTRIAL EDUCATION (Diesel Engines)

CATEGORY: SUMMARY

Priority Order	Identified Need	Potential Training Sources
1.	Fuel Systems	
2.	Diesel Fuel Injection	GM Training Center Miami, FL (George Kedan)
		Lucus Car Parts & Service Jacksonville, FL (Geoffrey Chart)
		Robert Bosch Sales Corporation Broadview, IL
		Stanadyne/Hartford Division Hartford CN (Joseph L. Rohr, Jr.)
3.	Truck Electricity	
4.	Roosa Master Systems	Stanadyne Corporation Hartford, CN
		Stanadyne Diesel Systems Hartford, CN
5.	Catepillar Engines	Catepillar Tractor Company Peoria, IL
6.	Diesel Emissions	Stanadyne/Hartford Division Hartford, CN (Joseph L. Rohr, Jr.)
7.	Cummins Engine	Cummins Training Center Tampa, FL (John Duplin)
		Southeastern Power, Inc. Tampa, FL
		Cummins Southeast Tampa, FL (Pattie)
8.	Hydraboost Brakes	GM Training Center Miami, FL (Bennie)
9.	Electric Diesel	Lincoln Electric

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: INDUSTRIAL EDUCATION (Auto Mechanics)
CATEGORY: SUMMARY

Priority Order	Identified Need	Potential Training Sources
1.	Tune-up Procedures	Key Power, Inc. Miami, FL (Jack Perez)
2.	Automotive Electrical	Delco Remy, Division of GM Anderson, IN
3.	Air Conditioning	Carrier Air Conditioning Syracuse, NY
4.	Fuel Injection Systems	Lucas Car Parts & Service Jacksonville, FL (Geoffrey Chart) Robert Bosch Sales Corporation Broadview, IL
5.	Brake Servicing	Ford Training School Jacksonville, FL
6.	Front End Alignment	Bear Manufacturing Corporation Rock Island, IL
7.	Computerized Auto	
8.	Automotive Trouble Shooting	Reliance Electric (Jim Arnot) Electric APPV Service Association St. Louis, MO (Dave Giphart)
9.	Emission Systems	GM Training Center Jacksonville, FL
10.	Overdrive Transmissions	

VOCATIONAL EDUCATION
TECHNICAL UPDATING NEEDS

SERVICE AREA: INDUSTRIAL EDUCATION (Welding)
CATEGORY: SUMMARY

Priority Order	Identified Need	Potential Training Sources
1.	Mig Welding	Mid-Florida Tech, Orlando Lincoln Electric Co.
2.	Arc Welding	Westside Skill Center-Jacksonville Seoane Welding School - Miami
3.	Tig Refresher	Hobart School of Welding, Vero Beach, Florida
4.	Welding Equipment	Strate Welding Supply Co. Jacksonville, Fl - Jeorge Strate
5.	Blue Print Reading	
6.	Welding Metallurgy	Hobart School of Welding, Troy, OH Hobart Bros. Co., Vero Beach, Fl.
7.	Aluminum Welding	
8.	Flux-Cored Welding	
9.	Oxacythlene	S. Boane Weldinn School, Miami, Fl.
10.	Plasma Cutting	Hobart Welding, Vero Beach, Fl.

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: INDUSTRIAL EDUCATION (Plumbing)
CATEGORY: SUMMARY

Priority Order	Identified Need	Potential Training Sources
1.	Plumbing Codes	
2.	Plumbing Construction	Kohler Co - Kohler, WS
3.	Plumbing Tools	Tool Manufacturers
4.	Drainage Systems	
5.	Plumbing Materials	
6.	Pipe Systems	Delta Faucet Co., Indianapolis, IN
7.	Advanced Math	
8.	Solar Systems	Mother Earth, Hendersonville, NC Energy Systems, Inc., El Cajon, CA
9.	Pipe Grading	Delta Faucet Co., Indianapolis, IN
10.	Pipe Welding	Hobart School, Troy, OH

VOCATIONAL EDUCATION

TECHNICAL UPDATING NEEDS

SERVICE AREA: INDUSTRIAL EDUCATION (Photography)

CATEGORY: SUMMARY

Priority Order	Identified Need	Potential Training Sources
1.	Camera Operations	Goldcoast Graphics-Mr. Larry Bahn
2.	Special Effect Photography	
3.	Photography Techniques	Eastman Kodak - Rochester, N.Y.
4.	Quality Control	Kodak Education Facilities, Atlanta, Georgia - Jim Warner
5.	Kodak Up-dates	Eastman Kodak, Rochester, N.Y.
6.	Film Assembly	
7.	Print Shop Management	
8.	Copy Photo Setting	
9.	Color Separation	Graphic Arts Tech Foundation, Pittsburg, PA. Rochester Institute of Tech, College of Graph, Rochester, N.Y. - Val Johnson Miami Dade, North - Miami
10.	Half Tone Productions	FIU Eastman Kodak Co., Atlanta, Georgia

VOCATIONAL EDUCATION
TECHNICAL UPDATING NEEDS

SERVICE AREA: Public Service
CATEGORY: Summary

Priority Order	Identified Need	Potential Training Sources
1.	Photo Identification	Smith and Wesson (Ann Toper)
2.	Criminal Law	State Attorney, Broward County (M. Satz) Edison Community College Ft. Myers (Dr. Al Frank)
3.	Accident Investigation	Northwestern Univ. --Traffic Inst. Evanston, IL
4.	Criminal Investigation	Tampa Police Department Tampa, FL (Major A.C. McLane)
5.	Jail Operations	Hillsborough Co. Sheriff's Dept. Tampa, FL (Sheriff Walter Heinrich)
6.	Locks Data	Inst. of Criminal Justice Studies San Marcos, TX
7.	Inspector Training	Bureau of Fire Fighting Standards Ocala, FL (Fred Stark, Bureau Chief)
8.	Hazardous Materials	Safety Systems, Inc. Jacksonville, FL (Ronald G. Gore)
9.	Fingerprint Classifications	Pensacola Police Department Pensacola, FL (Lt. Bob Grant)
10.	Hostage Situations	Penn State University University Park, PA

RECOMMENDATIONS

The following recommendations are offered as a result of the research activities undertaken and results obtained:

1. The State of Florida should produce a written model describing the methods by which it is using to technically update vocational teachers.
2. Business and Industry employers appear willing and in fact eager to assist schools in updating teachers. The Division and local schools should seek out their support to a great degree.
3. The Division should determine the level of technical skills needed by a teacher to be considered updated.
4. A method to determine the extent to which in-service learning was transported to the classroom should be developed and standardized for all vocational in-service.

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APPENDIX A

TRAINING SOURCE INFORMATION SHEETS NOT WITHIN THE STATE OF FLORIDA

Note: Much of the information on training sources outside of Florida were obtained form technical updating projects funded in Michigan and Mississippi.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Processing Occupations, Word Processing--Spacialization

Vocational Program Area: IBM Corporation

Address of Training Sites:

27777 Franklin Road
Southfield, MI 48034

Contact Person Jack Dilliom, Suite 1300

Telephone Number (313) 355-4300

Training Sites:

1. yes **In-house programmed instruction.**
   - varies **Length of delivery?**
   - varies **Cost of instruction?**
   - varies **Frequency of delivery?**
2. yes **Traveling representative.**
   - _____ **Length of delivery?**
   - _____ **Cost of instruction?**
3. _____ **Will allow internship teachers in business/industry facility.**
   - _____ **How many at one time?**
   - _____ **How much time will be involved?**
   - _____ **Will provide funding for interns?**

Additional information: M.T. McGrath, Branch Manager--Lansing-15L
L. McGinnis, Marketing Support Manager--Lansing-15L

There are centers in Grand Rapids and Kalamazoo and Green Bay, Wisconsin.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Air Conditioning, Refrigeration, and Heating Mechanics, Air Conditioning, Refrigeration, and Heating Technology

Vocational Program Area: Bacharach Instrument Division of Ambac INC.

Address of Training Sites:

9450 Bay Colony Drive, Unit 104
Des Plains, Illinois 60016

Contact Person Barbara K. Stoegbauer

Telephone Number (312) 296-6611

Training Sites:

1. ____ In-house programmed instruction.
   - ____ Length of delivery?
   - ____ Cost of instruction?
   - ____ Frequency of delivery?
2. yes Traveling representative.
   - depends Length of delivery?
   - none Cost of instruction?
3. ____ Will allow internship teachers in business/industry facility.
   - ____ How many at one time?
   - ____ How much time will be involved?
   - ____ Will provide funding for interns?

Additional information: They have combustion testing instruments to tune fossil fuel burning equipment to be more energy efficient. Usually they do a two hour presentation with a 25 participant maximum slides are shown in the presentation. They explain the theory, why, how to use the instruments with hands-on practice. They would talk of boilers, furnaces, heat treating equipment industrially, commercially, and residentially. Bill Milon recommends two hours for the presentation.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Air Conditioning, Refrigeration, and Heating Mechanics
Air Conditioning, Refrigeration, and Heating Technology, Commercial Refrigeration

Vocational Program Area: Carrier Air Conditioning

Address of Training Sites:

Carrier Parkway
Syracuse, New York 13201

Contact Person Louis Patalalita

Telephone Number (315) 432-6000

Training Sites:

1. yes **In-house programmed instruction.**
   - depends **Length of delivery?**
   - depends **Cost of instruction?**
   - variety **Frequency of delivery?**
2. yes **Traveling representative.**
   - ____ **Length of delivery?**
   - ____ **Cost of instruction?**
3. ____ **Will allow internship teachers in business/industry facility.**
   - ____ **How many at one time?**
   - ____ **How much time will be involved?**
   - ____ **Will provide funding for interns?**

Additional information: Summer Workshops about what present industry is like--can send for mailing list. They have workshop for one week with 280 techniques (basic registration). They have workshop for two weeks with 380 techniques (basic registration). They have an education materials catalog listing programs they have on the shelf in the form of booklets, slides, cassettes, and tapes for students that can be purchased on the average for 30-35 dollars (which reflects reproduction costs).

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Electromechanical Technology, Electric Motor and Generator Mechanics

Vocational Program Area: White-Rogers Division of Emerson Electric

Address of Training Sites:

9797 Reavis
St. Louis, MO 63123

Contact Person Chris Rayners

Telephone Number (314) 577-1300

Training Sites:

1. ______ **In-house programmed instruction.**
   - ______ **Length of delivery?**
   - ______ **Cost of instruction?**
   - request **Frequency of delivery?**
2. ______ **Traveling representative.**
   - depends **Length of delivery?**
   - depends **Cost of instruction?**
3. ______ **Will allow internship teachers in business/industry facility.**
   - ______ **How many at one time?**
   - ______ **How much time will be involved?**
   - ______ **Will provide funding for interns?**

Additional information: Wants company to develop training education program for teachers. Make request in writing.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Servicing Microwave Cooking Equipment

Vocational Program Area: General Electric Company

Address of Training Sites:

6501 East Nevada
Detroit, MI 48234

Contact Person C.J. Eary

Telephone Number (313) 956-0336 or 1-800-572-1932

Training Sites:

1. yes **In-house programmed instruction.**
   - 1 day **Length of delivery?** with electronic background
   - none **Cost of instruction?**
   - request **Frequency of delivery?**
2. yes **Traveling representative.**
   - _____ **Length of delivery?**
   - _____ **Cost of instruction?**
3. _____ **Will allow internship teachers in business/industry facility.**
   - _____ **How many at one time?**
   - _____ **How much time will be involved?**
   - _____ **Will provide funding for interns?**

Additional information: Three weeks lead time needed. Best months are August through October and January through April. They have worked with vocational teachers by helping on a committee at Oakland Area Center. Tehy do much with hands-on activities.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Industrial Plastics, Industrial Material Processing Industries

Vocational Program Area: Seelye Incorporated

Address of Training Sites:

9700 Newton Avenue South
Minneapolis, Minnesota 55431

Contact Person Kirby Bayerle

Telephone Number (612) 881-2658

Training Sites:

1. yes **In-house programmed instruction.**
   - 2 days **Length of delivery?**
   - daily expenses $60 **Cost of instruction?**
   - request **Frequency of delivery?**
2. yes **Traveling representative.**
   - ______ **Length of delivery?**
   - ______ **Cost of instruction?**
3. ______ **Will allow internship teachers in business/industry facility.**
   - ______ **How many at one time?**
   - ______ **How much time will be involved?**
   - ______ **Will provide funding for interns?**

Additional information: Tom Oliver works with Kirby Bayerle. They have additional offices in Detroit and Grand Rapids. They need 6-8 weeks lead time. Two types of plastics: thermo (which does soften), and thermo set (which does not soften i.e., fiberglass).

- Mandate by 1985 to decrease average weight of car from 4,000 lbs to 2700 lbs.
- Industry has grown 8% since last year; growing in leaps and bounds.
- Insurance company support plastics repair.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: ______

Vocational Program Area: Chrysler

Address of Training Sites:

P.O. Box 1919
Highland Park, MI 48288

Contact Person Jack Mills

Telephone Number (313) 956-2323

Training Sites:

1. yes In-house programmed instruction.

depends Length of delivery?

none Cost of instruction?

once annually Frequency of delivery?

2. yes Traveling representative.

_____ Length of delivery?

_____ Cost of instruction?

3. _____ Will allow internship teachers in business/industry facility.

_____ How many at one time?

_____ How much time will be involved?

_____ Will provide funding for interns?

Additional information: No organized seminars of workshops. Individual or group may participate in ongoing laboratory areas specialized in individual competencies. Guided tour, conference with supervising personnel, followed by hands-on experience to up-date competencies.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: ______

Vocational Program Area: Chrysler Institute

Address of Training Sites:

P.O. Box 1919
Highland Park, MI 48288

Contact Person Sid Hirschfield

Telephone Number (313) 956-2371

Training Sites:

1. yes In-house programmed instruction.

35-40 hrs. Length of delivery?

$200 -
$300 Cost of instruction?

3 or 4
annually Frequency of delivery?

2. yes Traveling representative.

______ Length of delivery?

______ Cost of instruction?

3. ______ Will allow internship teachers in business/industry facility.

______ How many at one time?

______ How much time will be involved?

______ Will provide funding for interns?

Additional information: Number of hours vary per day. John Bannon (313) 267-3369

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: ______

Vocational Program Area: Ford Parts and Service Division

Address of Training Sites:

Ford Motor Company
3000 Schaefer Road
P.O. Box 1902
Deaborn, MI 48121

Contact Person Training and Publications Dept.

Telephone Number ______

Training Sites:

1. yes In-house programmed instruction.
   40 hr. 5 day class Length of delivery?
   none Cost of instruction?
   Summer Frequency of delivery? Workshop for teachers
2. ______ Traveling representative.
   ______ Length of delivery?
   ______ Cost of instruction?
3. ______ Will allow internship teachers in business/industry facility.
   ______ How many at one time?
   ______ How much time will be involved?
   ______ Will provide funding for interns?

Additional information: Lansing contact number (517) 694-3301

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: ____

Vocational Program Area: GM Training Center

Address of Training Sites:

30901 Van Dyke Avenue
Warren, MI 48090

Contact Person Burck E. Grosse

Telephone Number (313) 575-8595

Training Sites:

1. yes In-house programmed instruction.
   - varies Length of delivery?
   - varies Cost of instruction?
   - varies Frequency of delivery?
2. yes Traveling representative.
   - ____ Length of delivery?
   - ____ Cost of instruction?
3. ____ Will allow internship teachers in business/industry facility.
   - ____ How many at one time?
   - ____ How much time will be involved?
   - ____ Will provide funding for interns?

Additional information: Randall G. Hunt, Manager Education Service. Regular summer programs for automotive teachers.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Fundamentals of Interior Design Services
Interior Design Services, Interior Design Technology

Vocational Program Area: School of Visual Design

Address of Training Sites:

209 East 23rd Street
New York, NY

Contact Person Eileen Gardner

Telephone Number (212) 679-7350

Training Sites:

1. ______ In-house programmed instruction.
   - ______ Length of delivery?
   - ______ Cost of instruction?
   - ______ Frequency of delivery?
2. yes Traveling representative.
   - varies Length of delivery?
   - expenses for travel Cost of instruction?
3. ______ Will allow internship teachers in business/industry facility.
   - ______ How many at one time?
   - ______ How much time will be involved?
   - ______ Will provide funding for interns?

Additional information:

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: ____

Vocational Program Area: Saginaw Steering Gear Division General Motor Corporation

Address of Training Sites:

3900 Holland Road
Saginaw, MI 38605

Contact Person George a Edwards

Telephone Number (517) 776-5876

Training Sites:

1. yes In-house programmed instruction.

varies Length of delivery?

none Cost of instruction?

request Frequency of delivery?

2. ____ Traveling representative.

____ Length of delivery?

____ Cost of instruction?

3. ____ Will allow internship teachers in business/industry facility.

____ How many at one time?

____ How much time will be involved?

____ Will provide funding for interns?

Additional information: Priorities and people or departments that can handle request: 1st George Edwards; 2nd Burton Packard; 3rd George Edwards; 4th Can do, but companys differ; 5th Burton Packard; 1stX None; 2ndX None; 3rdX Computer Department; 4thX Can do, but companys differ; 5th Burton Packard.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Graphic Design Technology, Photographic Technology
Commercial Photography

Vocational Program Area: Agfa-Gevaert

Address of Training Sites:

2803 Butterfield Road
Suite 200
Oakbrook, Illinois 60521

Contact Person David DiTallo

Telephone Number (312) 242-1951

Training Sites:

1. _____ In-house programmed instruction.
   - _____ Length of delivery?
   - _____ Cost of instruction?
   - 2½-3 hrs. Frequency of delivery?
2. yes Traveling representative.
   - 2½-3½ hrs. half day Length of delivery?
   - none Cost of instruction?
3. _____ Will allow internship teachers in business/industry facility.
   - _____ How many at one time?
   - _____ How much time will be involved?
   - _____ Will provide funding for interns?

Additional information: Call Michigan Representative at Home First: David DiTallo 13217 Lake Point Blvd., Belleville, MI 48111, (313) 357-1777. There is a presentation once a month in Southfield titled the "State of Art and Darkroom Techniques." Second largest of film in Europe, fifth largest of film in U.S.. Needs 2-3 weeks lead time for planning could do in Southfield Office or a Vocational Education Center.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: ______________________

Vocational Program Area: Compugraphic Corporation

Address of Training Sites:

80 Industrial Blvd.
Wilmington, MA 01887

Contact Person Kathy Hawkins

Telephone Number (617) 944-6555

Training Sites:

1. yes In-house programmed instruction.
    - 4 days Length of delivery?
    - $250 Cost of instruction?
    - flexible Frequency of delivery?
2. ______ Traveling representative.
    - ______ Length of delivery?
    - ______ Cost of instruction?
3. ______ Will allow internship teachers in business/industry facility.
    - ______ How many at one time?
    - ______ How much time will be involved?
    - ______ Will provide funding for interns?

Additional information: Six locations: Pinebrook, New Jersey; Atlanta, Georgia; Cerritos, California; Hayward, California; Arlington Heights, Illinois. Each location varies in the number of workshops offered annually range 2-15.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Graphic Design Technology, Photographic Technology
Commercial Photography

Vocational Program Area: E.I. Dupont

Address of Training Sites:

Photo Products Department
7415 Melvina Avenue
Niles, Illinois 60648

Contact Person Ron Craatz

Telephone Number (313) 358-[illegible]790

Training Sites:

1. _____ In-house programmed instruction.
    - _____ Length of delivery?
    - _____ Cost of instruction?
    - _____ Frequency of delivery?
2. yes Traveling representative.
    - _____ Length of delivery?
    - _____ Cost of instruction?
3. _____ Will allow internship teachers in business/industry facility.
    - _____ How many at one time?
    - _____ How much time will be involved?
    - _____ Will provide funding for interns?

Additional information: Ron Craatz
21523 Pleasant Avenue
St. Clair Shores, MI 48080

(313) 774-8571 (evenings)

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: ______

Vocational Program Area: Graphic Arts Foundation

Address of Training Sites:

4615 Forbes Avenue
Pittsburg, PA 15213

Contact Person Dr. Jack Simich

Telephone Number (412) 621-6941

Training Sites:

1. ______ In-house programmed instruction.
   - ______ Length of delivery?
   - ______ Cost of instruction?
   - request Frequency of delivery?
2. ______ Traveling representative.
   - varies Length of delivery?
   - none Cost of instruction?
3. ______ Will allow internship teachers in business/industry facility.
   - ______ How many at one time?
   - ______ How much time will be involved?
   - ______ Will provide funding for interns?

Additional information: When on location, a room must be provided and 20 or more teachers. A variety of one day updating sessions addressing competencies one, four and a little of plates are held. Teacher seminars--July through August--three-two week sessions. Summer institute for teachers, held in Pittsburg, usually around 60 teachers. Competencies one, two, three, four, five, plates, inks, paper, binding, management programming (inpart) are addressed. Specific example of a program: overview graphic communication (understanding what they mean by the industry), color theory and reporduction, science as applies to graphic arts, making half-tones and image assembly or film stripping. Monthly update for industry one day cost $60-$80 if member 40% discount.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: ______________________

Vocational Program Area: American Welding Society

Address of Training Sites:

2501 Northwest 7th Street
Miami, Florida 33125

Contact Person Glen Oyler

Telephone Number (305) 642-7090

Training Sites:

1. _____ In-house programmed instruction.
    - _____ Length of delivery?
    - _____ Cost of instruction?
    - _____ Frequency of delivery?
2. _____ Traveling representative.
    - _____ Length of delivery?
    - _____ Cost of instruction?
3. _____ Will allow internship teachers in business/industry facility.
    - _____ How many at one time?
    - _____ How much time will be involved?
    - _____ Will provide funding for interns?

Additional information: Debra Weir is Lansing Contact. 600 members in Detroit, MI. Not much in education courses yet. Education Manager in the future could help. Can supply educational materials; such as, books, codes, recommended practices, and handbooks.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: ______

Vocational Program Area: Hobart School of Welding Technology

Address of Training Sites:

Trade Square East
Troy, Ohio 45373

Contact Person Russell E. Simmons

Telephone Number (513) 339-6011

Training Sites:

1. yes In-house programmed instruction.
   seasonal,
   3 days Length of delivery? two weeks
   or varies
   seasonal Cost of instruction? and workshops
   courses
   ______ Frequency of delivery?
2. ______ Traveling representative.
   ______ Length of delivery?
   ______ Cost of instruction?
3. ______ Will allow internship teachers in business/industry facility.
   ______ How many at one time?
   ______ How much time will be involved?
   ______ Will provide funding for interns?

Additional information: For a traveling representative to visit you it would cost about $285 daily plus travel and living expenses.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: ______

Vocational Program Area: Lincoln Electric Welding Company

Address of Training Sites:

Cleveland
St. Clair, Ohio

Contact Person Dick Sabo

Telephone Number (216) 481-8100

Training Sites:

1. yes In-house programmed instruction.
   - ½ day in MI Length of delivery? one day at Lincoln
   - none Cost of instruction? sponsor lunch at Lincoln
   - ______ Frequency of delivery?
2. ______ Traveling representative.
   - ______ Length of delivery?
   - ______ Cost of instruction?
3. ______ Will allow internship teachers in business/industry facility.
   - ______ How many at one time?
   - ______ How much time will be involved?
   - ______ Will provide funding for interns?

Additional information:

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Cosmetology

Vocational Program Area: Michigan Beauty School Association

Address of Training Sites:

16900 W. Eight Mile Road, Suite 358
Southfield, MI 48075

Contact Person Pauline Drace

Telephone Number (313) 424-9123

Training Sites:

1. yes **In-house programmed instruction.**

varies **Length of delivery?**

varies **Cost of instruction?**

varies **Frequency of delivery?**

2. yes **Traveling representative.**

_____ **Length of delivery?**

_____ **Cost of instruction?**

3. _____ **Will allow internship teachers in business/industry facility.**

_____ **How many at one time?**

_____ **How much time will be involved?**

_____ **Will provide funding for interns?**

Additional information: May be an A or B member: A--have own institution; B--licensed cosmetologist (B can take part in any educational activity). Updating sessions usually in May on the third weekend, $50.00 registration. Follow-up hands-on the following Fall in September. Pauline Drace does Mock Exams in conjunction with the State Board Michigan State Administrators; when arranged they are on Saturdays.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Cosmetology

Vocational Program Area: Revlon Industries

Address of Training Sites:

767 5th Avenue
New York, NY 10022

Contact Person Gloria Pslanz

Telephone Number (212) 572-5690

Training Sites:

1. ______ In-house programmed instruction.
   1 day Length of delivery?
   none Cost of instruction?
   depends Frequency of delivery?
2. ______ Traveling representative.
   ______ Length of delivery?
   ______ Cost of instruction?
3. ______ Will allow internship teachers in business/industry facility.
   ______ How many at one time?
   ______ How much time will be involved?
   ______ Will provide funding for interns?

Additional information: Make request in writing.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: ____________________

Vocational Program Area: American Honda Motor Company, Incorporated

Address of Training Sites:

100 West Alondra
Gardena, CA 920247

Contact Person Linda Pemberton

Telephone Number (309) 752-5695

Training Sites:

1. yes In-house programmed instruction.
   - 1 wk Length of delivery?
   - none Cost of instruction?
   - request Frequency of delivery?
2. yes Traveling representative.
   - _____ Length of delivery?
   - _____ Cost of instruction?
3. _____ Will allow internship teachers in business/industry facility.
   - _____ How many at one time?
   - _____ How much time will be involved?
   - _____ Will provide funding for interns?

Additional information: Training centers are open to instructors, Honda and dealer personnel courses normally are held in the summer months and are developed at the National Office. CU's are available. If representatives come to Michigan from Greendale, Wisconsin their expenses such as lodging must be paid.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: ______

Vocational Program Area: Artic Enterprises

Address of Training Sites:

P.O. Box 635
Theif River Falls
Minneapolis, Minnesota 56701

Contact Person Dean Lawrenz

Telephone Number (218) 681-1147

Training Sites:

1. ______ In-house programmed instruction.
   - depends Length of delivery?
   - none for schools Cost of instruction?
   - depends Frequency of delivery?
2. ______ Traveling representative.
   - ______ Length of delivery?
   - ______ Cost of instruction?
3. ______ Will allow internship teachers in business/industry facility.
   - ______ How many at one time?
   - ______ How much time will be involved?
   - ______ Will provide funding for interns?

Additional information: There are update shcools for new model changes each year at the different dealers.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Marine Mechanics, Marine Propulsion Technology

Vocational Program Area: Johnson Outboard Product Group of Outboard Marine Corporation

Address of Training Sites:

701 Pershing Road
Waukegen, Illinois 60085

Contact Person Frank Normoyle

Telephone Number (312) 689-5310

Training Sites:

1. yes **In-house programmed instruction.**

   2 wks **Length of delivery?**

   none **Cost of instruction?**

   summer months **Frequency of delivery?**

2. yes **Traveling representative.**

   ______ **Length of delivery?**

   ______ **Cost of instruction?**

3. ______ **Will allow internship teachers in business/industry facility.**

   ______ **How many at one time?**

   ______ **How much time will be involved?**

   ______ **Will provide funding for interns?**

Additional information: This is a school. Educational materials are available. Opportunities for group arrangements for students to visit school free of charge. Will Taylor make presentation based on our needs (they feel it is difficult to get hands-on in 13 days). Would need to stay 12 nights coming on Sunday staying M-F 8-4:30. Reduced rates for housing at nearby hotel ($130 week for two). Transportation available between housing and school.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Agricultural Equipment Technology, Agricultural Machinery, Equipment, and Tractor Mechanics

Vocational Program Area: Briggs and Stratton Corporation

Address of Training Sites:

1150 Chesapeake Avenue
Gardner, Ohio 43212

Contact Person Bob Greusel

Telephone Number (614) 488-7951

Training Sites:

1. ______ **In-house programmed instruction.**
    - varies **Length of delivery?**
    - depends **Cost of instruction?**
    - varies **Frequency of delivery?**
2. ______ **Traveling representative.**
    - ______ **Length of delivery?**
    - ______ **Cost of instruction?**
3. ______ **Will allow internship teachers in business/industry facility.**
    - ______ **How many at one time?**
    - ______ **How much time will be involved?**
    - ______ **Will provide funding for interns?**

Additional information: World's largest manufacturer of air colled gasoline engines. At the factory in the summer there are two one week schools to teach the techniques, theroy related, and practical experiences of lawn and garden equipment development and service techniques (July)

- one CU credit is available
- July 13 and 27, 1980
- fee of $80.00 includes 5 nights lodging, 4 lunches, 1 evening banquet, all materials, and transportation between the gotel and school. There are periodic ½ to 4 day workshops held that can be custom made to fit specific needs.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Heavy Duty Truck and Bus Mechanics

Heavy Equipment Mechanics. Diesel Engine Mechanics

Vocational Program Area: Cummins Michigan Incorporated

Address of Training Sites:

3760 Wyoming Avenue
Dearborn, MI 48126

Contact Person William Lincoln

Telephone Number (313) 843-6200, ext. 9

Training Sites:

1. Yes In-house programmed instruction.
   - one day Length of delivery?
   - none Cost of instruction?
   - request Frequency of delivery?
2. Yes Traveling representative.
   - one day Length of delivery?
   - none, travel exp. Cost of instruction?
3. ______ Will allow internship teachers in business/industry facility.
   - ______ How many at one time?
   - ______ How much time will be involved?
   - ______ Will provide funding for interns?

Additional information:

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Heavy Duty Truck and Bus Mechanics. Marine Mechanics. Heavy Equipment Mechanics. Diesel Engine Mechanics

Vocational Program Area: Diesel Equipment and Sales and Service, Inc.

Address of Training Sites:

578 East Main; P. O. Box 187
Potterville, MI 48876

Contact Person Fred Wilson

Telephone Number (517) 645-7684

Training Sites:

1. Yes **In-house programmed instruction.**

   one to two **Length of delivery?**

   above $5.00 **Cost of instruction?**

   Request one to two mon~~ths lead~~ time **Frequency of delivery?**

2. Yes **Traveling representative.**

   one to two **Length of delivery?**

   Above $5.00 **Cost of instruction?**

3. ______ **Will allow internship teachers in business/industry facility.**

   ______ **How many at one time?**

   ______ **How much time will be involved?**

   ______ **Will provide funding for interns?**

Additional information:

November to February are the best times for a workshop.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Heavy Duty Truck and Bus Mechanics. Marine Mechanic. Heavy Equipment Mechanics. Diesel Engine Mechanics

Vocational Program Area: Peninsular Diesel Incorporated

Address of Training Sites:

Detroit Diesel Division of GM
4900 Stecker Avenue
Dearborn, MI 48126

Contact Person Earl Percy

Telephone Number (313) 584-7250

Training Sites:

1. Yes **In-house programmed instruction.**

   couple days **Length of delivery?**

   none **Cost of instruction?** except for service manuals for different engines

   by request **Frequency of delivery?**

2. no **Traveling representative.**

   ______ **Length of delivery?**

   ______ **Cost of instruction?**

3. ______ **Will allow internship teachers in business/industry facility.**

   ______ **How many at one time?**

   ______ **How much time will be involved?**

   ______ **Will provide funding for interns?**

Additional information: (Description)
Additional contact person Dave Leckie, Market Developer

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Commercial Photography. Photographic Technology

Vocational Program Area: Heidleberg Eastern Incorporated

Address of Training Sites:

73-75 Woodhaven Blvd.
Glendale, New York 11227

Contact Person Mr. Hercal

Telephone Number (212) 896-5500

Training Sites:

1. yes In-house programmed instruction.
   - Flexible Length of delivery?
   - None Cost of instruction?
   - Flexible Frequency of delivery?
2. yes Traveling representative.
   - Flexible Length of delivery?
   - None Cost of instruction?
3. _____ Will allow internship teachers in business/industry facility.
   - _____ How many at one time?
   - _____ How much time will be involved?
   - _____ Will provide funding for interns?

Additional information: (Description)

Detroit Contact Person:

Albert Reijmer, Sales Manager of Detroit Office
26975 Northline
Taylor, MI 48180 (313) 942-9030

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Emergency Medical Technology-Paramedic, Emergency Medical Technology-EMT, Fundamentals of Health Occupations, Health Occupations Cooperative Education

Vocational Program Area: The American Red Cross

Address of Training Sites:

Marquette County Chapter
North St.
Marquette, MI

Contact Person Karen Teichman

Telephone Number (904) 228-3658

Training Sites:

1. Yes **In-house programmed instruction.**

   42-60 hrs. **Length of delivery?** (2 nights a week, 3 hr. each)

   $5.50 **Cost of instruction?** books and bandages

   Request **Frequency of delivery?** depends on availability of instructor

2. Yes **Traveling representative.**

   same **Length of delivery?**

   same **Cost of instruction?**

3. ____ **Will allow internship teachers in business/industry facility.**

   ____ **How many at one time?**

   ____ **How much time will be involved?**

   ____ **Will provide funding for interns?**

Additional information: (description)
Program may operate in other counties.
Descripton of course may be secured by writing or calling your county chapter
Meets requirements for the National Ski Patrol
Essential information for developing the functional first aid capabilities required by policemen, firemen, and other special groups.
Also available through N.M.U. P.E. Department

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Emergency Medical Technology-Paramedic, Emergency Medical Technology-EMT, Fundamentals of Health Occupations, Health Occupations Cooperative Education

Vocational Program Area: The American Red Cross

Address of Training Sites:

Marquette County Chapter
North Street
Marquette, MI

Contact Person Karen Teichman

Telephone Number (904) 228-3658

Training Sites:

1. Yes **In-house programmed instruction.**

8 hrs. plus testing(books) **Length of delivery?**

$.60 **Cost of instruction?**

8-10 classes **Frequency of delivery?** (monthly)

2. Yes **Traveling representative.**

Same **Length of delivery?**

Same **Cost of instruction?**

3. ______ **Will allow internship teachers in business/industry facility.**

______ **How many at one time?**

______ **How much time will be involved?**

______ **Will provide funding for interns?**

Additional information: (Description)
Program may operate in other counties
Description of course may be secured by writing or calling your county chapter
Usually evenings 2 nights for 4 hrs. or 3 nights for 3 hrs.
Written and oral tests
CPR training teaches the correct techniques to provide heartbeat and breathing in in victims of cardiac arrest by means of external chest compression and mouth-to-mouth resuscitation. The course also increases awareness of early warning signs, risk factors, and symptoms.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Nursing and Health Problems (19)

Vocational Program Area: The American Red Cross

Address of Training Sites:

Marquette County Chapter
North Street
Marquette, MI

Contact Person Karen Teichman

Telephone Number (906) 228-3658

Training Sites.

1. Yes In-house programmed instruction.

   ______ Length of delivery?

   ______ Cost of instruction?

   ______ Frequency of delivery?

2. Yes Traveling representative.

   ______ Length of delivery?

   ______ Cost of instruction?

3. ______ Will allow internship teachers in business/industry facility.

   ______ How many at one time?

   ______ How much time will be involved?

   ______ Will provide funding for interns?

Additional information:
Different vareity of nursing and health programs may operate in your county.
Description of variety of courses may be secured by writing or calling your county chapter
Home Health Assistant (new course)
Health Services in disaster
Vital Signs (blood pressure, temperature, pulse)
Others

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: (Standard First Aid and Personal Safety) 12

Vocational Program Area: The American Red Cross

Address of Training Sites:

Marquette County Chapter
North Street
Marquette, MI

Contact Person Karen Teichman

Telephone Number (906) 228-3658

Training Sites:

1. Yes **In-house programmed instruction.**

14-18 hrs. (6 wks) **Length of delivery?** 1 night each 3 hrs.

$.50 **Cost of instruction?** text and bandages

by request, depends on availability of instructor **Frequency of delivery?**

2. Yes **Traveling representative.**

same **Length of delivery?**

same **Cost of instruction?**

3. ______ **Will allow internship teachers in business/industry facility.**

______ **How many at one time?**

______ **How much time will be involved?**

______ **Will provide funding for interns?**

Additional information:

Program may operate in other counties
Description of course may be secured by writing or calling your county chapter
Designed for general public, to prepare people by providing them with knowledge and skills to meet the needs of most situations when emergency first aid care is required and medical assistance is not excessively delayed.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Health Care Management, Orientation to Health and Public Service Occupations

Vocational Program Area: Health Care Institute

Address of Training Sites:

4201 St. Ant.
Detroit, MI 482 01

Contact Person Carol Stadler

Telephone Number (313) 494-4145

Training Sites:

1. Yes **In-house programmed instruction.**
   - one day **Length of delivery?**
   - depends on need **Cost of instruction?**
   - by request **Frequency of delivery?**
2. Yes **Traveling representative.**
   - same **Length of delivery?**
   - same **Cost of instruction?**
3. ______ **Will allow internship teachers in business/industry facility.**
   - ______ **How many at one time?**
   - ______ **How much time will be involved?**
   - ______ **Will provide funding for interns?**

Additional information:
Continuing education for nurses and physicians, medical malpractice, professional negligence, insurance issues.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Health Service Aide, Home Health Aide, Unit Treatment and Rehabilitation

Vocational Program Area: Kenny Michigan Rehab Foundation

Address of Training Sites:

6131 West Outer Drive
Detroit, MI 48235
______
______

Contact Person Ms. Helen Millen

Telephone Number (313) 342-5500

Training Sites:

1. ______ **In-house programmed instruction.**
   - ______ **Length of delivery?**
   - ______ **Cost of instruction?**
   - ______ **Frequency of delivery?**
2. Yes **Traveling representative.**
   - 1½-2 hrs. no max. **Length of delivery?**
   - none **Cost of instruction?**
3. ______ **Will allow internship teachers in business/industry facility.**
   - ______ **How many at one time?**
   - ______ **How much time will be involved?**
   - ______ **Will provide funding for interns?**

Additional information:

3-4 months advanced booking needed (at least)

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Exploration of Health Occupations
Orientation to Health and Public Service Occupations

Vocational Program Area: Kent Skill Center

Address of Training Sites:

111 College Avenue N.E.
Grand Rapids, MI 49503

Contact Person Cindy Streekstra, RN

Telephone Number (616) 364-8421, ext 25

Training Sites:

1. Yes In-house programmed instruction.
   1 or 2 days Length of delivery?
   $70.80 Cost of instruction?
   by request Frequency of delivery?
2. Yes Traveling representative.
   ____ Length of delivery?
   ____ Cost of instruction?
3. ____ Will allow internship teachers in business/industry facility.
   ____ How many at one time?
   ____ How much time will be involved?
   ____ Will provide funding for interns?

Additional information:
One trainer needed for every 8-10 people in the employability skills workshop--the workshop could be made relevant to the Health Care Profession by request.
Separate engagements may be requested for updating in new fields and future demands in the Health Care field, cost and length of delivery are flexible.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Mental Health/Human Services Technology, Unit Treatment and Rehabilitation, Practical Nurse.

Vocational Program Area: Mary Free Bed Hospital

Address of Training Sites:

235 Wealthy Street S.E.
Grand Rapids, MI

Contact Person Stroke Head Injury Clinic Coordinator

Telephone Number (616) 774-6774

Training Sites:

1. Yes In-house programmed instruction.
    - ______ Length of delivery?
    - ______ Cost of instruction?
    - ______ Frequency of delivery?
2. Yes Traveling representative.
    - ______ Length of delivery?
    - ______ Cost of instruction?
3. ______ Will allow internship teachers in business/industry facility.
    - ______ How many at one time?
    - ______ How much time will be involved?
    - ______ Will provide funding for interns?

Additional information:

Program is developmental at this point in time
Implementation beginning in 1979
Organized workshops for special groups and the community and traveling representatives will be available.
No details at this point in time.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Hospital Ward Cler, Medical Records Technology

Vocational Program Area: Michigan League of Nursing

Address of Training Sites:

51 West Warren Avenue
Detroit, MI 48201

Contact Person Dr. Hartig

Telephone Number (313) 833-5444

Training Sites:

1. Yes **In-house programmed instruction.**

one day **Length of delivery?**

Depends on who makes the presentation **Cost of instruction?**

____ **Frequency of delivery?** Once in a while throughout year

2. Yes **Traveling representative.**

____ **Length of delivery?**

____ **Cost of instruction?**

3. ____ **Will allow internship teachers in business/industry facility.**

____ **How many at one time?**

____ **How much time will be involved?**

____ **Will provide funding for interns?**

Additional information:

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Health Occupations Cooperative Education

Vocational Program Area: Room 3290 HEP Building

Address of Training Sites:

University Hospital
Ann Arbor, MI 48109

Contact Person Edward Goldman

Telephone Number (313) 764-2178

Training Sites:

1. Yes **In-house programmed instruction.**
   - Flexible **Length of delivery?**
   - Flexible **Cost of instruction?**
   - by request **Frequency of delivery?**
2. Yes **Traveling representative.**
   - ______ **Length of delivery?**
   - ______ **Cost of instruction?**
3. ______ **Will allow internship teachers in business/industry facility.**
   - ______ **How many at one time?**
   - ______ **How much time will be involved?**
   - ______ **Will provide funding for interns?**

Additional information:

Legal and ethical changes for physician assistants and and general malpractice for nurses.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Food Management, Production and Services, Food Production and Services, Fundamentals of Food Management, Production and Services

Vocational Program Area: Association for Child Development

Address of Training Sites:

P. O. Box 10089
Lansing, MI 48901

Contact Person Pam Boyce

Telephone Number (517) 332-7200

Training Sites:

1. ______ In-house programmed instruction.
    - ______ Length of delivery?
    - ______ Cost of instruction?
    - ______ Frequency of delivery?
2. Yes Traveling representative.
    - 2 hrs. Length of delivery?
    - Depends, materials Cost of instruction?
3. ______ Will allow internship teachers in business/industry facility.
    - ______ How many at one time?
    - ______ How much time will be involved?
    - ______ Will provide funding for interns?

Additional information:
Sponsor of child care program and nutrition activities for children (pre-school). Snacks.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Dietetic Technology, Nutrition and Dietetic Service

Vocational Program Area: Dairy Council of Michigan
Nutrition Education

Address of Training Sites:
920 Long Blvd., Suite 4
Lansing, MI 48910

Contact Person Sue Berg

Telephone Number (517) 694-2752

Training Sites:

1. _____ In-house programmed instruction.
   - _____ Length of delivery?
   - _____ Cost of instruction?
   - _____ Frequency of delivery?
2. Yes Traveling representative.
   - _____ Length of delivery?
   - _____ Cost of instruction?
3. _____ Will allow internship teachers in business/industry facility.
   - _____ How many at one time?
   - _____ How much time will be involved?
   - _____ Will provide funding for interns?

Additional information:
Minimum 20 participants
They have a program already organized for teachers of pre-school education titled "Good Beginnings"
The program includes:
. Hands-on activity centers
. A basic nutrition review
. Sequencing different teaching techniques and reinforcing them
. A film

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Child Guidance and Care Services, Child Guidance Care and Mangement Services, Fundamentals of Human Care Services

Vocational Program Area: Pre-Kindergarten State Model
Saginaw Board Education

Address of Training Sites:

Pre-Kindergarten Office; Houghton School
Johnson Street, Saginaw, MI

Contact Person Reva Ruby

Telephone Number (517) 776-0433

Training Sites:

1. Yes **In-house programmed instruction.**
   - ______ **Length of delivery?**
   - ______ **Cost of instruction?**
   - ______ **Frequency of delivery?**
2. Yes **Traveling representative.**
   - ______ **Length of delivery?**
   - ______ **Cost of instruction?**
3. ______ **Will allow internship teachers in business/industry facility.**
   - ______ **How many at one time?**
   - ______ **How much time will be involved?**
   - ______ **Will provide funding for interns?**

Additional information:
Team does in-servicing
IV-C Demonstration Site
Title I Program in 14 Buildings
Funded by State Dept. of Ed. and the Office of Highway Safety Planning
They deal with educational programs for children, parenting, and staff development.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Child Guidance and Care Services, Child Guidance Care and Management Services, Fundamentals of Human Care Services.

Vocational Program Area: Division of Child Care Center Licensing

Address of Training Sites:

116 W. Allegan
P. O. Box 30037
Lansing, MI 48909

Contact Person Janine Stephenson

Telephone Number (517) 373-8300

Training Sites:

1. ______ In-house programmed instruction.
   - ______ Length of delivery?
   - ______ Cost of instruction?
   - ______ Frequency of delivery?
2. Yes Traveling representative.
   - ______ Length of delivery?
   - ______ Cost of instruction?
3. ______ Will allow internship teachers in business/industry facility.
   - ______ How many at one time?
   - ______ How much time will be involved?
   - ______ Will provide funding for interns?

Additional information:

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Commercial Foods and Culinary Arts

Vocational Program Area: The Educational Institute American Culinary Federation, Inc., National Apprenticeship Training Program.

Address of Training Sites:

920 Long Blvd., Suite 1
Lansing, MI 48910

Contact Person Robert H. Nelson

Telephone Number (517) 694-6090

Training Sites:

1. Yes **In-house programmed instruction.**
    - varies **Length of delivery?**
    - varies **Cost of instruction?**
    - varies **Frequency of delivery?**
2. Yes **Traveling representative.**
    - ______ **Length of delivery?**
    - ______ **Cost of instruction?**
3. ______ **Will allow internship teachers in business/industry facility.**
    - ______ **How many at one time?**
    - ______ **How much time will be involved?**
    - ______ **Will provide funding for interns?**

Additional information:

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Food Distribution, Food Distribution-Specialist Management, Food Service Marketing

Vocational Program Area: Rich Products

Address of Training Sites:

11368 Kelly Road
Detroit, MI 48224

Contact Person Dion Facciolla

Telephone Number (813) 527-3602

Training Sites:

1. Yes **In-house programmed instruction.**
   - depends **Length of delivery?**
   - none **Cost of instruction?**
   - by request **Frequency of delivery?**
2. Yes **Traveling representative.**
   - ______ **Length of delivery?**
   - ______ **Cost of instruction?**
3. ______ **Will allow internship teachers in business/industry facility.**
   - ______ **How many at one time?**
   - ______ **How much time will be involved?**
   - ______ **Will provide funding for interns?**

Additional information:

Rich Products is a manufacturer of products
On location appropriate facilities are needed (ovens and proofboxes)
They need to know the number attending (need enough to make it worthwhile) and the areas to be covered.
They have a broker (to represent them) in Grand Rapids called Philips Associated
Jim Philips
437 44th Street, S.W.
Grand Rapids, MI 49508 (616) 538-2980

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Data Processing Occupations
Word Processing-Specialization

Vocational Program Area: Xerox Corporation

Address of Training Sites:

26555 Evergreen
Southfield, MI 48076

Contact Person Carol Coffee

Telephone Number (313) 353-4200

Training Sites:

1. ______ **In-house programmed instruction.**

2 hrs. **Length of delivery?**

none **Cost of instruction?**

weekly **Frequency of delivery?**

2. ______ **Traveling representative.**

______ **Length of delivery?**

______ **Cost of instruction?**

3. ______ **Will allow internship teachers in business/industry facility.**

______ **How many at one time?**

______ **How much time will be involved?**

______ **Will provide funding for interns?**

Additional information:

The purpose of the sessions is to prevent unnecessary service calls do's and don't, maintenance, avoid and correct problem programs.
Lansing Branch at customer location, anywhere in Michigan
Ray Behrens, Sales Representative: (517) 394-1010

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: ______________________

Vocational Program Area: Yahama Motor Corporation

Address of Training Sites:

National Service Area
6555 Katella Avenue
Cypress, CA 90630

Contact Person Dave Benedict

Telephone Number (714) 761-7460

Training Sites:

1. Yes In-house programmed instruction.
   - depends Length of delivery?
   - none Cost of instruction?
   - depends Frequency of delivery?
2. Yes Traveling representative.
   - ______ Length of delivery?
   - ______ Cost of instruction?
3. ______ Will allow internship teachers in business/industry facility.
   - ______ How many at one time?
   - ______ How much time will be involved?
   - ______ Will provide funding for interns?

Additional information:
They handle their hands-on schools with a maximum of 12 participants.
It is impossible for them to tailor make a workshop for the vocational teachers
Schools for motorcycles are located in: Cypress, CA, Atlanta, GA, Carrollton, Texas, Mount Lawrel, New Jersey, Cutahay, Wisconsin
Snowmobile dealerships have 1-2 seminars annually or by need lasting ½-1 day. They alwo have other two day seminars.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Agricultural Equipment Technology, Agricultural Machinery, Equipment, and Tractor Mechanics, Agriculatural Power Machinery, and Equipmment Operation and Maintenance

Vocational Program Area: Toro Power Products Engine Division

Address of Training Sites:

Tecumseh Factory Service School Service Dept.
900 North Street
Grafton, WI 53024

Contact Person Dave Grade and Del Schlamp

Telephone Number (414) 377-2700, ext. 536,537

Training Sites:

1. Yes **In-house programmed instruction.**
   - varies **Length of delivery?**
   - depends **Cost of instruction?**
   - varies **Frequency of delivery?**
2. Yes **Traveling representative.**
   - ______ **Length of delivery?**
   - ______ **Cost of instruction?**
3. ______ **Will allow internship teachers in business/industry facility.**
   - ______ **How many at one time?**
   - ______ **How much time will be involved?**
   - ______ **Will provide funding for interns?**

Additional information:

Two summer schools, June and July, 5 days each, 8-4:30, $95.00 which includes hotel Sun-Thurs. night, lunches Mon-Thurs., banquet Thurs. night, and transportation between the hotel and school--vocational teachers only--In 1980 summer dates are June 15 and July 7. Some of the topies covered are: tear down, rewind starters, microfiche trouble shooting, failure analysis, 2 and 4 cycle, theory repair, ignition theory, testing of ignition systems, solid state.

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: ______

Vocational Program Area: Polaris E-Z-Go Division of Textron, Inc.

Address of Training Sites:

Highway 89
Roseau, Minnesota 56714

Contact Person Dick Arneson

Telephone Number (218) 463-2312

Training Sites:

1. preferable In-house programmed instruction.
    - 2-5 days Length of delivery?
    - depends Cost of instruction?
    - depends Frequency of delivery?
2. Yes Traveling representative.
    - ______ Length of delivery?
    - ______ Cost of instruction?
3. ______ Will allow internship teachers in business/industry facility.
    - ______ How many at one time?
    - ______ How much time will be involved?
    - ______ Will provide funding for interns?

Additional information:
Branch in Lansing
Fee would include registration, materials, noon lunches and evening banquet
65-75 participants needed

TRAINING SOURCE INFORMATION SHEET

Technical Updating Need: Marine Mechanics, Marine Propulsion Technology

Vocational Program Area: Mercury Marine

Address of Training Sites:

1818 Research Division
Fort Wayne, Indiana 46808

Contact Person Don Bartelt

Telephone Number (219) 483-8111

Training Sites:

1. preferable **In-house programmed instruction.**
    - depends **Length of delivery?**
    - none **Cost of instruction?**
    - request **Frequency of delivery?**
2. Yes **Traveling representative.**
    - ______ **Length of delivery?**
    - ______ **Cost of instruction?**
3. ______ **Will allow internship teachers in business/industry facility.**
    - ______ **How many at one time?**
    - ______ **How much time will be involved?**
    - ______ **Will provide funding for interns?**

Additional information:
Region that handles Upper MI
1939 Pioneer Road, Fond DuLac, Wisconsin 54935, (414) 921-8220

Training courses for their people last two weeks expanded to five weeks starting in 1980.
Service school for dealers meets between November 1 and May 1.
They will tailor make presentations for us after May and before November.